NORTHEAST MARKETING ISSUE
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INDUSTRY WEEK

New $18 Million U.S. Steel Nitrogen Products Plant in Utah in Production

(Photo on Page 21)

ALT LAKE CITY—The new $18 lion Columbia-Geneva nitrogen ducts plant of U.S. Steel Corp. Geneva, Utah went into produc- recently.

W. T. Purvance, Geneva Works f engineer, said that about half the plant's estimated 70,000-ton year capacity would go into am- nium nitrate and the remainder ld go into anhydrous ammonia.

First unit to begin operation was nitric acid plant, and this has n followed by the coke oven gas ification and separation plant.

Two grades of nitric acid will be produced at the new plant—the concentrated acid, which will be sold to producers and refiners of metals, makers of explosives, etc., and the lower strength nitric acid which will be mixed to make ammonium nitrate.

The ammonium nitrate plant is now in production, according to Mr. Purvance.

"We're going to have our complete line of nitrogen products available to farmers and ranchers throughout the Intermountain West for the 1957 growing season," Frank Adams, U.S. Steel coal chemical's western sales manager, said.

The staff, working out of Salt Lake City, covers the 11 western states.

40,000 Ton-a-Year Swift & Co. Plant In St. Joseph, Mo. Starts Operations

T. JOSEPH, MO.—The new Swift Co. plant food factory here is in duction, following an open house the general public Feb. 17 and for lers and other business connec- s the previous day.

This 26th producing unit of the t plant food division will serve ritory composed of western Mis- ri, Kansas, Nebraska, Colorado part of Oklahoma. Previously area was supplied from other s in Mason City, Iowa, and Na- l Stock Yards, Ill.

The new factory, rated at a 40,000- per year plant, represents the newest in design for a moderate-sized plant to serve a relatively compact territory and limit freight costs as much as possible, company officials said. It is nearly all automatic. Swift plans to produce all types of granular plant food as well as small-package goods for lawn and garden.

R. W. Finch, formerly manager of the Swift plant at Portland, Ore., is manager now at St. Joseph and John Day, who has been at the Calumet City plant, will be in charge of production. Matt Ryan,

(Continued on page 5)

New IMC Fertilizer Plant in Minnesota Scheduled to Start Production Feb. 18

ICAGO—International Minerals emical Corp. has announced that new fertilizer plant in Fairfax, n. is to start production Feb. 18.

Officials of the firm's Plant Food vision said that it is the first fer- zer plant in the U.S. to be con- ucted entirely of pre-cast con- ete.

Exterior walls and interior bulk- ds, made entirely of concrete, of- advantages in material handling provide for easy expansion of the plant to the south and east, the officials said.

The single-story structure occupies a 100 x 140 foot area on a 40-acre site a mile and a half west of Fairfax, and about a quarter of a mile south of State Highway 19. It provides 10,000 square feet of storage space, capable of handling about 25,000 tons of fertilizer annually, and 4,000 square feet of manufacturing area. Freight handling facilities, occupying the entire north side of the plant, include a truck loading dock and a spur line from the tracks of the

(Continued on page 5)

Hayes-Sammons Chemical Co. Building New Formulating Plant in Mississippi

(Photo on Page 21)

INDIANOLA, MISS.—Thos. B. mmons, Jr., president of Hayes- mmons Chemical Co., Mission, xas, has announced expansion of firm into the Delta area with con- uction of a new agricultural chem- al formulating plant and sales of- e here.

The plant now is under construc- on and should be completed by mid-March. It will serve all states in the Mississippi Delta, Mr. Sammons said.

Andy N. White, entomologist and sales manager of the chemical division at the Mission, Texas office for the past five years, has been transferred to Indianola to be general manager of the Delta division plant and sales. Arthur E. Smith, Jr., assistant production superintendent at the Mission, Texas plant, will be the production superintendent.

$205 Million in New Fertilizer Building Planned

WASHINGTON—The fertilizer industry will spend an estimated $205 million on new domestic construction through 1957 and 1958, according to a survey recently made public by the Manufacturing Chemists' Assn.

The industry brought $202 million worth of new construction into production in 1956, the survey shows.

Of the $205 million tagged for new building through 1957 and 1958, $74,525,000 is in the stage of definite planning and $130,420,000 is under construction.

All of the projects in the survey are privately financed. For the entire chemical industry the total cost of projects completed in 1956, plus those under construction or definitely planned for completion within the next two years will be more than $3.6 billion. Included in this figure are $816 million for inorganic chemicals and $862 million for organic chemicals.

USDA Sets Price Supports for Oilseeds, Upland Cotton

WASHINGTON—The U.S. Department of Agriculture has announced the following actions on price support for 1957-crop oilseeds:

Soybeans will be supported at a national average price of $2.09 bu., which is 70% of the Jan. 15, 1957 parity price of $2.98 bu.

Flaxseed will be supported at a national average price of $2.92 bu., which is 65% of the Jan. 15, 1957 parity price of $4.50 bu.

Cottonseed will be supported on a basis to reflect approximately 65% of the Jan. 15, 1957 parity price of $71 per ton average quality seed. Loans on farm-stored cottonseed will be available at an average of $46 per ton basis grade (100).

Price support for 1957-crop upland cotton at a minimum level of 28.15¢ per pound, gross weight, basis Middling ⅞-inch at average location, also was announced by USDA.

FDA Establishes Monuron Tolerance

WASHINGTON—The U.S. Food and Drug Administration has established tolerances for residues of monuron (3-(p-chlorophenyl)-1,1 dimethylurea) for use on raw agricultural commodities.

Tolerances were set at 7 parts per million on asparagus and 1 part per million on citrus citron, cottonseed, grapefruit, grapes, kumquats, lemons, limes, onions (dry bulbs only), oranges, pineapple, spinach, sugarcane, tangelos and tangerines.

FDA also has announced that a petition has been filed by Shell Chemical Corp., New York, proposing establishment of a tolerance of .25 part per million for residues of aldrin on carrots, horseradish, parsnips, radishes and salsify roots.

TVA Working on New Process for Granular Super

Finished Product Dry Enough to Go Directly to Storage

KNOXVILLE, TENN.—Tennessee Valley Authority said Feb. 13 that it has under development a new one-step process of making granular triple superphosphate.

The product is made in the TVA-developed ammoniator-granulator pilot plant which acts, in this process, as an acidulating drum, Charles H. Young, manager of chemical engineering for TVA, said.

"TVA investigators found in pilot-plant work that when phosphate rock and phosphoric acid are mixed in a rotating drum, the rolling action of the drum forms the material into pellets or granules," Mr. Young said. "The product is dry enough to go directly to storage, where it remains for about a week to allow completion of the reactions. Some advantages of the process are low equipment costs, no drying requirement, and a product that can be ammoniated and mixed like non-granular superphosphate."

Mr. Young added that studies are under way for adapting the process to the production of normal and enriched superphosphates.

Alfalfa Aphid Seen As $42 Million Target for Sales

By JOHN CIPPERLY
Croplife Washington Correspondent

—SEE MAP ON PAGE 21—

WASHINGTON—The spotted alfalfa aphid is now seen as a $42 million sales target for the pesticidal chemical industry, according to U.S. Department of Agriculture estimates made available here last week to Croplife. Such is the extent of damage from this pest to the alfalfa industry in the U.S., and the latest round-up of information on the spread of this pest in the U.S. during 1956 indicates it is now found in 30 states.

The usually alert pesticidal chem-

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Farm and Non-Farm Use of Herbicides Reviewed at 10th Southern Weed Conference

AUGUSTA, GA.—The uses of herbicides in reducing costs of weed control on farms and highways were discussed thoroughly during sessions of the tenth annual Southern Weed Control Conference held at the Bon Air Hotel, Augusta, Jan. 23-25. Authorities from Southern land-grant colleges, the U.S. Department of Agriculture, industry representatives and growers were present to participate on the program or to make up the crowd of more than 250.

Subjects covered a wide range of weed control considerations, both farm and non-farm. In the latter category, it was reported that using herbicidal sprays has cut the cost of highway mowing in Ohio from $108 per mile of roadway in 1953 to $70 in 1956. This was reported by Wilbur J. Garmhausen, chief landscape architect, Ohio Highway Department. He told conference members that the department's spray program showed that roadside mowing was almost eliminated and roadsides were given a neater appearance by the spray treatment. Mr. Garmhausen indicated that highway spraying could be important as a safety factor for motorists by providing better vision from absence of tall weeds at highway intersections and along the insides of curves.

Plant-eating fish are being used experimentally to control troublesome weeds in farm ponds, explained H. S. Swingle, Alabama Polytechnic Institute researcher. Mr. Swingle told the conference that Israelean carp and tilapia fish gave partial control of pond weeds in preliminary tests at Auburn, Ala.

"We'll need several more years of tests to decide the usefulness of this practice," he declared. He also emphasized that none of the plant-eating fish would be available for stocking farm ponds until tests are completed.

Chemical herbicides such as sodium arsenite and copper sulfate are useful in controlling many pond weeds and "pond scum," Mr. Swingle added. However, they must be used carefully so as not to reduce fish production, he found.

Railroads can cover 50 to 100 miles a day of right-of-way by using weed control chemicals as sprays, John P. Quarles, president of the National Aluminate Corp., told conferees. Where weeds can be eliminated chemically, usually nature will cover the area with grasses, he explained. "By selecting the proper chemical and using the right dosage, we can even do chemical mowing of grasses," Mr. Quarles said.

Essentially, the railroad weed control problem is "one of determining the chemical or combination of chemicals that will give the desired results most economically over a wide range of conditions," Mr. Quarles added.

Conference delegates heard that a plant parasite of corn and other summer grass crops was identified for the first time in the United States last summer. O. E. Rud, North Carolina State College scientist, told the group that the parasitic plant, Striga, has been found growing in eight North and South Carolina counties. More surveys will be made next spring to find the full extent of the plant's spread.

Chemical treatment of the aboveground parts of the plant to prevent seed formation looks like a promising means of control, along with crop rotation and other methods. Each plant may produce as may as 50,000 tiny seeds, each weighing only 1/20th as much as a tobacco seed, he said.

Jack Dreessen, herbicide specialist for the National Agricultural Chemicals Assn., Washington, D.C., explained that more than 30 million acres of cropland in the nation will be treated chemically for control of weeds this year.

Weeds have been costing farmers about $4 billion a year, according to United States Department of Agriculture spokesmen, explained Mr. Dreessen. That's equal to the value of the nation's entire corn crop. Chemical weed control is a way to cut this drain on farm income.

Mr. Dreessen added that scientists are working in laboratories across the country in trying to help reduce this loss! Chemicals that are selective in nature, because they are able to kill weeds growing in crops without harming the crops themselves, have been developed. When properly applied, these chemicals will cause sure death for the unwanted weeds and grasses.

Different chemicals have been developed to control weeds in corn, rice, barley, oats, wheat, cotton, flax and other crops. In cotton, the weed control chemicals are replacing hand hoeing of weeds. Other chemicals are effectively removing unwanted trees, brush and weeds from timber and grasslands.

Another use of the new group of chemicals is for keeping aquatic weeds under control. These weeds, growing in ponds, streams and irrigation ditches, are costly and difficult to control by any other means. Without chemical means of control, the weeds clog and reduce the value of ponds and streams.

Nearly every farmer can use chemicals for clearing weeds from fence rows, Mr. Dreessen also explained. Industrial concerns use similiar chemicals for keeping weeds cleared around oil tank farms, right of ways, and other uses. Highway departments spray chemicals along right of ways to provide safer, more beautiful, more economically maintained highway and roadway routes than could be practically obtained by mowing alone.

Another big agricultural use for some of the chemicals is defoliation of cotton. Removing or arresting the growth of the leaves of the cotton plant by chemical spraying or dusting increases efficiency of mechanical pickers and raises the grades of the cotton, because less trash remains in the cotton lint when it is ginned.

Aerial as well as many forms of ground application can be used to apply chemicals either for weed control or cotton defoliation, Mr. Dreessen pointed out. But he cautioned farmers to observe reasonable precaution in using any of the chemicals. There are three ways to get advice about using the materials:

(1) See the county agent or other farm adviser, or the state experiment station or extension service.

(2) Consult available bulletins, for information about the safest and best time and amounts to apply.

(3) Read and observe the printed label and warnings on the containers of chemical weed or brush killer.

Mr. Dreessen concluded that the widespread use of the chemicals on millions of farms is a good indication of how well they are paying off.

In other discussions prepared for the conference, A. J. Watson of The Dow Chemical Co., Midland, Mich., explained some of the details of research work in post-emergence applications of DNBP, to control weeds in peanuts. Mr. Watson reported that promising results in the control of small annual broadleaved weeds and grasses in peanuts have been obtained by applying the chemical in water. A spray volume of 40 to 50 gallons an acre was used on peanuts from the emergence stage to the 4-leaf stage of early growth. Injury to the peanuts was slight and temporary.

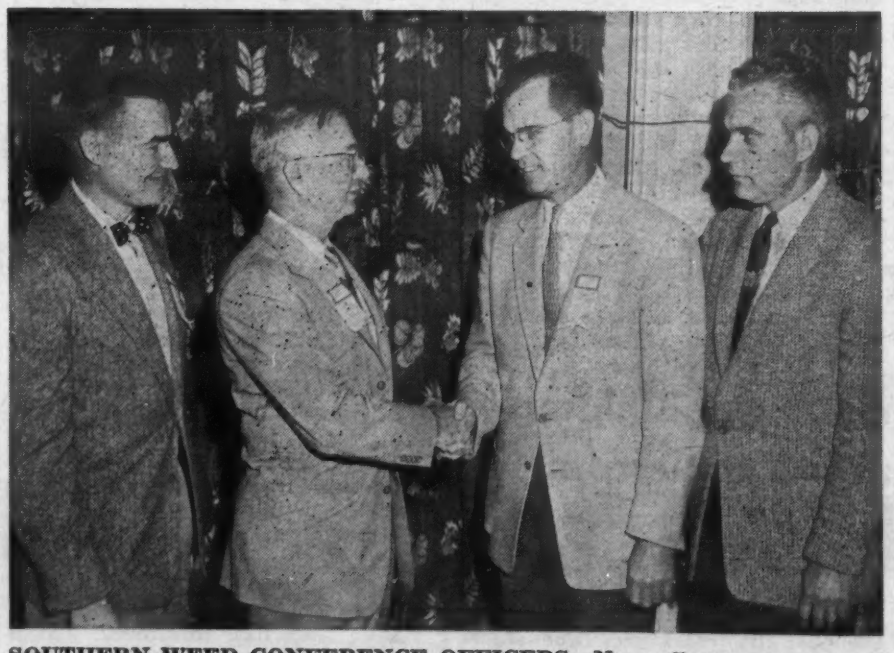
Dr. W. K. Porter, experiment station specialist at Louisiana State University, reported on research in pre-emergence application of some herbicidal chemicals for weed control in cotton. The tests were conducted over a period of 5 years on several different soil types in Louisiana. It was found that about 12 hours of hand labor for hoeing purposes was required per acre when the pre-emergence herbicidal treatments were used. When no treatment was used, the requirements for hand labor ranged up to 33 hours per acre for hoeing.

One of the new herbicidal chemicals, mylone, is being tested for control of nematodes and soil fungi as well as many annual and perennial weeds. Classed as a temporary soil sterilant, the chemical is used at the rate of three-fourths pound per 100 square feet. R. J. Zedler and J. W. Keays, Carbide and Carbon Chemical Co., New York, told the conference that it can be used in the soil up to three weeks before the vegetable or tobacco seed or other materials are planted in the soil.

The conference elected new officers to serve for 1957-58. Dr. E. G. Rodgers, University of Florida, Gainesville, was elected president for the new term. New vice president is Dr. R. Behrens, U.S. Department of Agriculture and Texas A&M College specialist at College Station, Texas. Dr. W. K. Porter, Louisiana Agricultural Experiment Station, Baton Rouge, was elected secretary-treasurer. Dr. W. B. Albert, Clemson College, South Carolina, is retiring president.

The conference has set its meeting place for next year at the Peabody Hotel in Memphis, where it will meet jointly with the Weed Society of America. Meeting date will be January 13 to 15, 1958.

The 1959 meeting of the conference will be January 21 to 23 at the Captain Shreve and Washington Youree Hotels in Shreveport, Louisiana.



SOUTHERN WEED CONFERENCE OFFICERS—New officers were named at the tenth annual Southern Weed Conference held Jan. 23-25 at the Bon Air Hotel, Augusta, Ga. The newly-elected officials are seen above, left to right; Dr. R. Behrens, USDA, Texas Agricultural Experiment Station, College Station, Texas, vice president; Dr. W. B. Albert, South Carolina Agricultural Experiment Station, Clemson, retiring president; Dr. E. G. Rodgers, University of Florida, Gainesville, president; and Dr. W. K. Porter, Louisiana State University, Baton Rouge, secretary-treasurer.

Clemson Pesticide Chemicals School Set for Feb. 27-28

CLEMSON, S.C.—Plans for the sixth annual pesticide chemical school to be held here Wednesday and Thursday, Feb. 27-28, are now being completed. The program will be under the direction of Dr. J. H. Cochran, head, department of entomology and zoology, and Dr. W. M. Epps, head, department of botany and bacteriology. Registration will begin at 9 a.m. Feb. 27.

Although the completed program has not been announced, the following topics are scheduled for discussion: (1) New insect problems in South Carolina with emphasis on the spotted alfalfa aphid, Japanese beetle, sweet potato weevil and the pepper maggot; (2) new weed and disease problems including oak wilt, camellia flower blight and Striga (new parasitic weed that attacks corn); (3) safe use of chemical pesticides; (4) insecticide recommendations with emphasis on insect resistance to insecticides; and (5) chemicals for nematode, disease, and weed control.

One of the featured speakers to appear on the program will be Dr. G. H. Hepting, chief, division of forest disease research, Southeastern Forest Products Laboratory, Asheville, N.C. In addition, several other outstanding speakers in the field of pest control are also expected to appear on the program, including members of the Clemson College staff.

The Clemson House Hotel will be headquarters for the school, and all sessions will be held in the new auditorium. Room reservations should be made direct with the hotel management. The meeting will close at noon Feb. 28.

Vegetable Advisory Group Urges More Research

WASHINGTON — High-priority needs for expansion of research on vegetables for better quality control from producer to consumer were considered by the U.S. Department of Agriculture's Vegetable Research and Marketing Advisory Committee, at its annual meeting here recently.

Lines of work considered by the committee as top-priority research needs included:

Expand studies on the genetics and breeding of vegetable varieties resistant to insects, nematodes and diseases and with better eating and commercial qualities. Initiate research to develop and improve farm machines for producing, farm handling and storing commercial vegetable crops. Increase basic work on the effects of insecticides on insects with emphasis on insect physiology as a basis for improving insect control.

CORN BORER CIRCULAR

URBANA, ILL.—Latest recommendations on control of corn borers in field corn have been published by the University of Illinois College of Agriculture. The new publication is Circular 768, "Controlling Corn Borers in Field Corn With Insecticides," by W. H. Luckmann and H. B. Pet

Maryland Speakers Point Out Savings Via Herbicide and Insecticide Applications

COLLEGE PARK, MD.—Insect, matode, disease and weed controls re covered at the University of aryland's annual Agricultural emicals Conferences Feb. 12, 13 d 15.

Three sessions were held, one each, La Plata, Easton and Frederick, d., in order to give more pesticide alers, field men, county agents, rmers and others interested in agri-ltural chemicals an opportunity to tend.

The La Plata meeting featured obacco, since this is the principal rop grown in Southern Maryland. Dr. O. E. Street, in charge of to-acco research at the University old about two tobacco bed drench-s he has used successfully in obacco trials. The drenches are apam and bedrench, for control of eeds, insects, nematodes and soil-orne diseases of tobacco.

The chemicals are drenched on the anted beds with a watering can or se and then washed into the soil ith an equal amount of water. They ve been tried successfully at both e research farm and on several to-acco farms in Maryland's five to-acco counties.

A history of the chemical control nematodes was covered by Dr. O. Morgan, assistant professor of ant pathology. He followed this ith a discussion on the quality of rious nematocides in regard to eir efficiency, economy and usabili-. He said that different chemicals e now used for various types of matodes, diseases and other plant sorders, but the trend is in the di-ction of a combined chemical for l these troubles.

Methylbromide and chloropicrin e good for controlling nematodes, ngi, bacteria and weeds in high sh crops like strawberries, he said.

Dr. Morgan also reported on the e of antibiotics for controlling wild e in tobacco plant beds. He said e University is studying new chem-als for control of anthracnose in bacco beds, but results have not en announced as yet.

H. S. McConnell, research asso-iate professor of entomology overed chemical controls for sev-ral tobacco pests and gave some evisions of previous years' recom-endations.

Dr. Paul Santelman, extension eed specialist, reported that tests ve shown two light treatments of lapon are more effective on John-n grass than one heavy treatment. e also reported that randox, has oved quite effective for the control annual grasses and giant foxtail corn and soybeans. Another chem-al, simazan has been found effec-ve in the northeast for all weed ntrol in corn.

Amino triazole, used for the first me in Maryland this past summer, as very effective in controlling nadian thistle, horsenettle, milk-eed and poison ivy. Dr. Santelman ld he sprayed some poison ivy-fested honeysuckle with amino tria-le and the ivy was completely eli-inated. The honeysuckle showed me ill-effects but recovered quickly.

Dr. L. O. Weaver, extension plant thologist talked about the use of neb and zineb for control of to-ato plant diseases. He also dis-ssed the use of these chemicals for e control of downy mildew on lima ans. As did most of the other eakers, Dr. Weaver too, emphasized e importance of nematode control. e mentioned the use of nemagon d said excellent results have been tained with it in controlling nema-des in strawberries. Here, the emical is sidedressed after the awberry plants have been set. In e past, the soil had to lay idle for couple of weeks after the nema-tocide was used and before the plants were set. Now, this is not necessary.

Neburon, a new chemical not yet on the market, was successful in controlling weeds in sweet potatoes, reported Dr. A. A. Duncan, extension vegetable speicalist. Neburon was used in tests by the University last summer, he said, and it shows promise for weed control in other transplanted crops, too. Dr. Duncan also covered weed control in peas through the use of dinitro compounds, in asparagus with monuron, in leaf crops with CIPC and in root crops with vegedex.

A. F. Vierheller, extension fruit specialist, told of the success Maryland fruit growers have had in using Sesone and Crag 1 for controlling weeds in commercial and home plantings of strawberries. These chemicals are applied after cultivation to kill new weed seeds. He also covered the use of dormant sprays, namely, CIPC for chickweed and dinitro compounds for chickweed, henbit and other winter annual weeds.

Wallace Harding, Jr., assistant extension entomologist, covered the control of insect pests of lawns and ornamental plantings. Included in his talk were directions for preparing small amounts of spray materials for home gardeners. His remarks were aimed primarly at county agents who are receiving an ever-increasing number of questions from home owners about their lawns and plants.

Ted L. Bissell, extension entomologist, gave his listeners some general recommendations for the control of vegetable, field and forage crop insects.

He listed the alfalfa weevil, pea aphid and potato leafhopper as the principal insect pests of alfalfa. He said it is estimated that half a ton of alfalfa hay (worth $16) can be saved with one application of spray costing about $4.32. At the University's research farm, four sprays during the year costing $10.71 increased the yields on small plots by nearly 1.5 tons, worth $43.80. Chemicals used were heptachlor, malathion and methoxychlor.

Mr. Bissell also recommended heptachlor to fight seed corn maggot, wireworm and armyworm in corn and grain. In sweet corn for canning, he said DDT has proved itself against corn borers. The chemical is applied when the corn is in the whorl stage, and before silking, by both ground machines and airplane. DDT oil sprays should be applied by ground machines after silking, to protect the corn against the corn earworms, he added.

At the end of each session the speakers answered questions asked by the chemical dealers and county agents. Dr. Weaver was general chairman for the conferences and all speakers are members of the University College of Agriculture staff.

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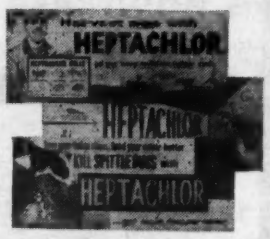

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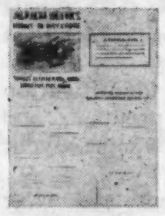

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USDA to Resume Witchweed Quarantine Hearings March 3

WASHINGTON—Hearings on the problems of the appearance of witchweed in the corn producing areas of the nation will resume here March 3 at Room 3106, South Building, U.S. Department of Agriculture.

In the Feb. 4 issue of Croplife a somewhat too conclusive headline reporting of the first meeting on this problem left the incorrect impression that quarantine action had been rejected. This error was induced by the story itself which reported that concern over a quarantine in the reported infested areas had "evaporated" at the first meeting.

What was meant was that opposition to any threat of quarantine diminished after the meeting developed substantial facts concerning the incidence of this pest and the danger of its spread into the commercial Corn Belt.

According to USDA officials they could hardly countenance any deferment of drastic action to a pest which threatened substantial damage to such an important crop as corn. In fact, were the commercial corn area farmers to realize the possibility of damage from this pest they would demand strong, quick, drastic action.

USDA officials are not unmindful of the dangers of permitting such a pest to get out of hand. Quarantine as such implies radical action of sealing off an infested area without any protection for the producers in the area.

It is largely a matter of interpreting the word "quarantine" and modifying the appropriate action which USDA may take in imposing a quarantine. It is now understood that any quarantine would mean that the farmers in an infested area would be asked to halt the production of the host crop—in this case corn—in a known infested area. In return for their cooperation they would be compensated for such remedial cultivation practices as they would perform where witchweed had been identified.

Crop Care Appoints Contract Division Head

SACRAMENTO, CAL.—Cal Butler of Redmond, Ore., has been named manager, contract division, by Crop Care, Inc., Charles H. Branstetter, Jr., president, has announced. Mr. Butler will be in charge of the firm's forest and grasshopper spraying projects.

Crop Care has 11 TBM aircraft, some owned and some under lease, for use on this type of program this year, Mr. Branstetter said. Mrs. Wanda Branstetter, former executive secretary of the Agricultural Aircraft Assn., is now vice president and treasurer of Crop Care.

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potash division

INTERNATIONAL MINERALS & CHEMICAL CORPORATION
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Hercules Net Sales Set New Record; Net Income Down

WILMINGTON, DEL.—Hercules Powder Co. in its 1956 report to stockholders showed an all-time high of $235,903,000 in net sales and operating revenues, an increase of 4% over last year. Sales for 1955 were $226,651,000.

Net income after all charges was $17,703,000, equal to $2.13 a share of common stock. This represented a decline from 1955 when net income totaled $19,013,000, equal to $2.30 a share of common stock. Common dividends were $1.10 a share, the same as last year.

Hercules spent approximately $34,500,000 during 1956 for new facilities. This expansion program was about 2½ times the amount spent for new facilities in 1955, and was 50% greater than the construction expenditure in any previous year in the company's history.

Expenditures for research as well as for construction reached all-time high levels. Hercules reported $10,504,000 spent in 1956 for research.

A. E. Forster, president and chairman of the board of Hercules, said in his letter to stockholders that "As in many other segments of industry, however, prices did not keep pace with increases in wages and in costs of materials and services purchased."

The report showed that 16% of the company's production was consumed during 1956 by the protective coatings industry, 13% by the paper industry, 11% in mining and quarrying, 10% in synthetic fibers, 8% in agricultural chemicals, 7% in plastics, 6% each by the rubber and petroleum industries, 3% each by construction and identifiable military uses, 2% in adhesives and 15% by others.

Chemical Fallow Trials in Wyoming Look Promising

LARAMIE, WYO.—A new method of stubble or mulch farming now under test by Wyoming research and extension workers is giving promising experimental results.

The new process, known as chemical fallow, kills young weeds and volunteer grain by chemicals rather than cultivation. The old stubble is left standing to protect the soil from wind and water erosion.

So far, large-scale tests under field conditions show that one to three sprayings adequately controlled the weeds.

The first spray, a mixture of 5 lb. of Dalapon and 2 lb. of 2,4-D, was applied in the spring after the weeds sprouted. It controlled the grass weeds and volunteer grain for the season. Additional applications of 2,4-D controlled the Russian thistle which germinated after summer rains.

In the fall, farmers cooperating in the experiment drilled wheat in the stubble. If the soil was packed, they cultivated the ground once just before planting.

When fully tested and proved, chemical fallow will be particularly helpful where wet spring seasons on heavy soils make early cultivation for weeds difficult, the Wyoming researchers say. Chemical fallow does not leave an impermeable sole or layer below the surface of the soil that often occurs with plowing or blading.

Also, the increased cover of standing stubble holds winter snows and gives added protection against winter and spring blowing, especially on light or sandy soils.

INSECT CONTROL CIRCULAR

MADISON, WIS.—The University of Wisconsin Extension Service has published a circular entitled "Insect Control in 1957."

SDA Recommends eduction in 1957 otato Acreage

WASHINGTON—The U.S. Department of Agriculture in its acreage al recommendations for 1957 sumer and fall production has asked e potato industry to reduce over- acreage by 5%. The heaviest imct would be in the late crop states Maine, Idaho, New York, Minneta, North Dakota and Washington.

Acreage guides issued last week by SDA asked growers in the 10 early mmer crop states of Missouri, Kans, Delaware, Maryland, Virginia, orth Carolina, Georgia, Kentucky, ennessee and Texas to cut back creage to 99,500 or 98.7% of 1956. For the late summer states the tback requested is 4.1%.

In the Northeast potato states roup of late states the reduction sked is 4.4% from last year on an verage. The biggest cutback would ome in Maine, Rhode Island and ong Island where the cutbacks asked ange as follows: 93, 91 and 92% of 956 crops.

For the late central states USDA as recommended an over-all reduction of acreage by 4.2% with deepst reductions asked for Indiana at 5%; Minnesota at 91% and North akota at 95% of last year.

In the western fall states the over- ll acreage reduction recommendaion is 10%. Deepest of these cuts re asked in Idaho at 85% of 1956; yoming at 87%; Nevada at 85; ashington at 85.

By producing regions the recommended reduced goals are as follows: ll crop acreage for 1957, 837,920 cres, 6.2% cut from 1956 acreage; otal winter crop, 33,800 acres par ith 1956, and total spring acreage t 181,980 acres or 94% of 1956.

Weather's Effects on Cotton to Be Studied

MEMPHIS—A better understanding of the effects of weather conditions on all phases of cotton production is the aim of workshops to be eld Feb. 20-21 at Delta Branch Experiment Station, Stoneville, Miss.

As part of the program staff members of the experiment station will ell the effects of weather on various hases of production. Topics will include obtaining stands, J. B. Dick; eed control, J. T. Holstun; irrigaion, P. H. Grissom; insect control, M. E. Merkl; defoliation, H. R. Carns; nd harvesting, O. B. Wooten.

CORN BORER CONTROL

URBANA, ILL.—More than 665,000 acres of corn in Illinois were reated for control of corn borer n 1956.

SWIFT PLANT

(Continued from page 1)

formerly at National Stock Yards, Ill., is assistant superintendent.

Harold Brown, Swift construction ngineer, Chicago, was in charge of uilding the new plant and was in St. oseph for the open house. Also present at the opening was W. F. Price, f Chicago, manager of the Swift & Co. plant food division. The building, f steel construction, is located south f the stockyards in South St. Joseph n an uncongested area just off a ain highway.

The factory has a connecting warehouse of 5,300 square feet which will arry 2,000 tons of bagged materials. n the main plant there is room for 0,000 tons of bulk storage of finished roducts in 16 bays, half of which olds 800 tons and the remainder bout 400 tons. In addition, there are our smaller bins for granular raw aterials. The St. Joseph plant is airly close to sources of supply and oes not plan to carry heavy stocks f unprocessed goods.

IMC PLANT

(Continued from page 1)

Minneapolis and St. Louis Railway, which passes directly north of the plant.

Maurice H. Lockwood, IMC vice president in charge of the Plant Food Division, said the decision to locate a plant in Fairfax was prompted by the expanding market for fertilizer in Minnesota, and the desire to continue improving the company's service to its customers in that area. He pointed out that the consumption of fertilizer in Minnesota has been increasing at the rate of 14% a year over the past five years and is now about double what it was in 1950.

International formerly serviced the market from its Mason City, Iowa, plant. The Plant Food Division operates 24 other fertilizer plants in the Midwest, East and South.

The Fairfax plant, started last August, was designed by the company's plant engineering section with the Chicago engineering consulting firm of Verne E. Alden Co. Davey-Moen, of Mason City, was the general contractor.

E. P. Ruszat, who has had nearly 20 years of service with IMC, and formerly was plant superintendent at Mason City, will operate the Fairfax plant.

Thompson-Hayward Elects Vice Presidents

KANSAS CITY—Robert S. Thompson, president of the Thompson-Hayward Chemical Co., Kansas City, has announced that Robert E. Ballinger has been elected vice president in charge of purchasing and secretary of the company, and Noland Franz has been elected vice president and treasurer. Mr. Ballinger has been secretary of the company since 1943 and Mr. Franz has been treasurer since 1955.

Hypro Expands Minneapolis Plant

MINNEAPOLIS—Hypro Engineering, Inc., rotary pump manufacturer, has doubled its plant here with the addition of a 10,000 square foot one-story structure.

The firm, which started in a basement workshop in 1947, now distributes over the entire U.S. and into 79 foreign countries. Among Hypro products are pumps for weed and insect control.

Stanley J. Dumovich In New Atlas Post

WILMINGTON, DEL.—Atlas Powder Co. has named Stanley J. Dumovich as salesman in its Houston chemicals sales office, succeeding Latane deS. Lamb, who resigned. Mr. Dumovich, an Atlas employee since 1952, moves to Houston from Atlas' chemicals regional sales office in Chicago.

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Safe Handling of Pesticides Emphasized at Conference of Louisiana Aerial Applicators

BATON ROUGE, LA.—The safe handling of dusts and sprays employed against the cotton boll weevil was one of the chief topics of discussion at the recent annual conference of the Louisiana Aerial Insecticide Applicators' Assn. Interest centered on the organic phosphate materials, with some references to calcium arsenate, the two materials that are being employed in large sections of the Louisiana cotton belt where the weevil has become resistant to other toxicants that have been effective for the past several years. The consensus was that both the phosphates and calcium arsenate can be handled safely but that they must be treated with respect and the directions of entomologists and the manufacturers must be followed.

The conference was held at Louisiana State University in Baton Rouge under sponsorship of the LSU agricultural extension service and the Louisiana Aerial Insecticide Applicators' Assn. Present were about 100 pilots and representatives of agricultural flying services.

Hazards in the handling of insecticides were discussed by Dr. Charles S. Petty of the LSU medical school, Warren Reinhart of the Louisiana state board of health, and E. A. Epps, Louisiana state chemist. Charts were shown illustrating the effects of the poison and the treatment of persons affected.

Among other things, the speakers emphasized that pilots should not help ground crews load insecticide into planes and that they should never fly through their own dust or mist. Symptoms particularly dangerous to pilots, it was said, are dizziness, mental confusion and loss of the senses of time and depth perception. Ground applicators also suffer much the same hazards, speakers pointed out, and should observe similar precautions.

Particular interest was shown in this subject by pilots and operators, as some of them reported having suffered organic phosphate poisoning in 1956. As a result of the discussion, tentative plans were laid for the State board of health to collect blood samples of persons handling phosphate insecticides and send them to the LSU medical school for examination as to cholinesterase content, a means of detecting phosphate poisoning. It is contemplated that this service will be offered on a weekly basis.

Joseph C. Brusse, engineer at the Texas aircraft research center at Texas A&M College, gave an illustrated talk on the development and use of airplanes in the application of insecticides. He also discussed the methods of application that will secure the best results, with attention to such details as wind velocity, swath-width and flagging of fields.

Other topics included relationships between farmers and applicators, discussed by a panel of pilots and farmers; forest work by plane, discussed by Dr. Paul Burns of the LSU Forestry School; control of stink bugs in rice, discussed by Kirby L. Cockerham, LSU agricultural extension service entomologist; regulations governing the operation of planes, discussed by E. A. Cancienne, Louisiana State department of agriculture entomologist, and the use of herbicides in rice, discussed by Dr. John Baker of the LSU department of plant pathology and E. A. Epps, state chemist.

The cotton insect control recommendations for Louisiana this year were outlined by Dr. L. D. Newsom, entomologist for the LSU agricultural experiment station.

In brief, Dr. Newsom said that in areas where the boll weevil is not resistant to the chlorinated hydrocarbon insecticides, the latter should be used as specified in previous recommendations. Growers should watch their crops carefully and be prepared to shift to calcium arsenate or the organic phosphate should it appear that control is not being obtained.

In areas where the weevil is resistant to the chlorinated hydrocarbons, calcium arsenate and various mixtures of the organic phosphates should be used, according to experiment station recommendations. Resistant weevils have been found in large areas, Dr. Newsom said, in the cotton section of Northeast Louisiana and along the Red River delta region of Northwest and Central Louisiana.

Woody Dry, assistant extension entomologist, discussed the relationship between pilots and commercial checkers, pointing out that both groups are working for the same farmer and that they can get the best results by cooperating with each other.

Presiding at the meeting of a day and a half was Walter H. Broussard, president of the association.

Olin Mathieson Consolidates in New Omaha Office

OMAHA—Operations of the north central district of the Plant Food Division of Olin Mathieson Chemical Corp. have been consolidated in new headquarters at 800 S. 72 St., Omaha, it has been announced by S. Y. Roth, district manager.

Mr. Roth said that the district sales office, established just a year ago, required additional space to handle its expanding business. In addition, warehousing facilities for pesticides now adjoin the sales office.

Irrigation, warehousing and assembly operations, formerly located at Grand Island, Neb., also have been consolidated at the Omaha location.

The north central district serves the states of Wisconsin, Minnesota, Iowa, Nebraska, North Dakota, South Dakota, Montana, Wyoming and Colorado in the sales of Ammo-Phos high analysis fertilizer, pesticides, irrigation systems, anhydrous ammonia for direct application, and other Mathieson agricultural chemicals.

Pesticide Field Trial Service Offered by California Company

BAKERSFIELD, CAL. — A new service for field testing of pesticides has been announced by Hazel & Thomas Pacific Coast Pesticide Trials here.

The aim of the service is to supplement and assist existing company product development workers in field pesticide trials under commercial farm conditions. The service will make arrangements for test plots, supervise applications, make photographic records, collect biological data such as insect counts, yield information, residue samples for analysis and other necessary data.

Norman W. Hazel took his B.S. degree in entomology as well as additional graduate work at the University of California at Berkeley until 1949. After that he was employed by Producers Cotton Oil Co. for 3 years as field entomologist. In 1953 Mr. Hazel left Producers to go into business for himself in the field of supervised pest control in Kern County, California.

Sherman L. Thomas graduated from San Jose State College in 1949 with a B.A. degree in entomology. For 2½ years he worked with the Hippelates gnat project in the Coachella Valley. In 1952, Mr. Thomas left the project to be employed by Agriform Co., Inc., as entomologist. In the first part of 1956 he left Agriform to go into the field of supervised pest control in Kern County.

Both Mr. Hazel and Mr. Thomas will continue their entomological consulting practice in connection with the pesticide trials service.

The primary site of the pesticide trials program will center in Kern County, which is located at the southern tip of the San Joaquin Valley.

Emulsol Chemical Corp. To Occupy Larger Quarters

CHICAGO—As part of an expansion program for 1957, Emulsol Chemical Corp., Chicago, manufacturer of surface-active agents, will move its sales and administrative offices on or about March 10 from 59 East Madison St. to larger quarters at 75 East Wacker Drive. The new phone number will be FInancial 6-2960.

The firm's parent company, Witco Chemical Co., of New York, has its Chicago offices at the same address. Emulsol's laboratory will remain at 59 East Madison St.

Sydney H. Rogers — Robert L. Harper — James A. Hunter

National Potash Names Three to Sales Staff

NEW YORK—An assistant sales manager and two additional sales representatives have been appointed by National Potash Co., it was announced by William B. Porterfield, Jr., vice president and sales manager.

Sydney H. Rogers, named assistant sales manager, is a graduate of Yale University and Harvard Business School. For the past three years he was manager of out-of-town sales for Spring Mills, Inc., New York.

Robert L. Harper will represent the company in the territory west of Chicago under the direction of Cash J. Cahill. Mr. Harper is a graduate in agriculture from the University of Missouri and has been a county agent in that state.

James A. Hunter, the second new sales representative, will cover the northeastern territory of the U.S. and Quebec out of the company's New York headquarters. He is a graduate of the University of Richmond and has been the manager of a fertilizer plant in Fairmount, N.C.

L. J. Polite, Jr., Named Head of Chlorinated Products for Diamond

CLEVELAND—Promotion of L. J. Polite, Jr., to product sales manager of the chlorinated products division of Diamond Alkali Co., Cleveland, was announced at its national headquarters here Feb. 1 by Loren P. Scoville, general manager of the division.

Sales manager for certain major Diamond organic chemicals during the past year, Mr. Polite will now hold over-all sales responsibility for the line of chlorinated products manufactured by the company at plants in Painesville, Ohio; Deer Park and Greens Bayou, Texas; Newark, N.J., and Belle, W. Va. These include chlorinated solvents, organic intermediates, acids, Chlorowax (a chlorinated paraffin) and agricultural chemicals.

A veteran of 15 years' service with Diamond, Mr. Polite joined the company as a sales representative in 1942 following graduation from Williams College, Williamstown, Mass., where he earned a B.A. degree. In February, 1952, he was named assistant sales manager of agricultural chemicals and made his headquarters at Diamond's eastern agricultural chemicals plant in Newark, N.J.

Returning to the company's general offices in Cleveland two years later, Mr. Polite was promoted to agricultural chemicals sales manager. In February, 1956, he was assigned sales management responsibility for selected Diamond organic chemicals.

Mr. Polite served with the U.S. Navy in the Pacific area from 1942 to 1945.

C. Loyal W. Swanson Appointed Agronomist For the Texas Co.

NEW YORK—Dr. C. Loyal W. Swanson has been appointed agronomist in the research and technical department of the Texas Co., it has been announced by Dr. Wayne E. Kuhn, general manager of the department.

In addition to his technical service activities, Dr. Swanson will direct Texaco's research in experimental applications of synthetic plant nutrients.

The Texas Co. is presently constructing a 180-ton-a-day ammonia plant at Lockport, Ill. Initial shipments of anhydrous ammonia and nitrate solutions will be made from the new plant later this year.

Dr. Swanson, a native of Peterson, Iowa, was recently elected a Fellow of the American Society of Agronomy and has held both academic and public posts. He received a B.A. from Coe College in 1933. He completed his graduate studies at Iowa State College, where he was awarded an M.S. in 1938 and a Ph.D. in 1941.

He has taught and engaged in soils research at Iowa State College, the University of Missouri and the University of New Hampshire. He recently headed the department of soils of the Connecticut Agricultural Experiment Station at New Haven.

In 1951 Dr. Swanson received the American Society of Agronomy's Stevenson Award for leadership in soils research. He was chief of the Soils and Fertilizer Branch, on the staff of the Supreme Commander for the Allied Powers, Tokyo, and was decorated for his meritorious services.

CROP SHOW

BROOKINGS, S.D.—W. A. Albrecht, head of the soils department at the College of Agriculture, University of Missouri, will be the featured speaker at South Dakota's state-wide crop show to be held here Feb. 25-27.

John C. Denton

Spencer Chemical Elects Five New Vice Presidents

KANSAS CITY—Spencer Chemical Co. has announced the election of five new vice presidents and the assignment of new responsibilities for its principal officers.

John C. Denton, formerly general works manager, was elected vice president—agricultural chemicals and will be in charge of an integrated product division responsible for the production and sale of the company's agricultural chemical products.

Mr. Denton will direct the production and sales of the company's agricultural chemicals including ammonium nitrate fertilizer and Spensol ammoniating solutions. He first joined Spencer in 1942, and since that time has served in a variety of engineering and production positions, including assistant chief engineer, works manager of the Henderson, Ky., works, and general manager of engineering and construction. He is a graduate of the University of Tulsa. His office is in Kansas City.

H. R. Dinges, formerly general manager of industrial chemical sales, was elected vice president—industrial chemicals and will be in charge of an integrated product division responsible for the industrial chemical and commercial product segments of the company's business.

Frank Pyle, formerly works manager of the company's polyethylene plant at Orange, Texas, was elected vice president—plastics and will head up the company's plastic division including production, sales and product development in the polyethylene and nylon fields.

Dr. John R. Brown, Jr., formerly managing director of research and development, was elected vice president—research and development.

E. V. Friedrich, formerly assistant to the president, was elected vice president—administration.

C. Y. Thomas, John P. Miller and Joe E. Culpepper, all of whom have been vice presidents and directors of the company for several years, will be primarily concerned with divisional coordination at a policy level and long range planning for future growth.

The announcement was made by Kenneth A. Spencer, president of the company.

BANKERS' CONFERENCE

MANHATTAN, KANSAS—The first biennial conference of agricultural representatives of Kansas banks will be held at Kansas State College Feb. 22-23. The conference will consider problems of Kansas bank agricultural representatives, and reports on various aspects of agriculture, according to Wilfred Pine of the Kansas state department of agricultural economics.

Southern Group Announces Fertilizer Safety Program

RICHMOND, VA. — Program details for the fertilizer section of the eighteenth annual Southern Safety Conference have been announced. The meeting will be held here March 4-5.

Scheduled to start at 2 p.m. March 4, Quentin S. Lee, Cotton Producers' Assn., Atlanta, Ga., will open the meeting, followed by W. D. Smith, Southern States Cooperative, Richmond, who will talk on "Dollars and Cents in Safety."

Other topics of the afternoon will include safe handling of anhydrous ammonia, ammonium nitrate and ammonim nitrate solutions, by C. E. Franklin, Phillips Petroleum Co., Bartlesville, Okla., and "Pile Reduction and the Use of Dyanamite" by Stan Roberts, Liberty Mutual Insurance Co., Norfolk, Va.

Vernon S. Gornto, Smith-Douglass Co., Norfolk, Va., former chairman of the National section, will moderate a panel discussion on "What a Good Safety Program Can Do for the Fertilizer Industry."

Participating in this discussion will be three men and a lady, representing various types of manufacturing firms and conditions.

Grayson Morris, Southern States Coop., Richmond, will speak on "Mobile Plant Equipment"; A. H. Haeberle, Virginia-Carolina Chemical Corp., Richmond, "Electrical Hazards"; Mike C. Ellison, Mississippi Chemical Corp., Yazoo City, Miss., "Safety Training Program for Plant Foremen"; W. A. Stone, Wilson & Toomer Fertilizer Co., Jacksonville, Fla., "Housekeeping and Safety"; and Mrs. Ann Turbeville, Florence Manufacturing Co., Inc., Florence, S.C., "First Aid — Important to a Safety Program?"

The conference is scheduled on March 5 with a general discussion on the subject of safety in fertilizer plants.

Otto S. Steinen Named Agchem Sales Manager by Naugatuck

NEW YORK—Otto S. Steinen has been appointed sales manager for agricultural chemicals by the Naugatuck Chemical division, United States Rubber Co., it was announced recently by Earle S. Ebers, general sales manager.

Mr. Steinen replaces Dr. T. W. Brasfield, who has been named Los Angeles district manager for the chemical division. In this post Dr. Brasfield will supervise sales of all the division's products in the 11 western states, manage its Los Angeles latex compounding plant and warehouse operation.

In his new post Mr. Steinen will supervise the national sales of Naugatuck Chemical's five patented agricultural chemicals. The chemicals are Spergon and Phygon, both fungicides; Alanap, a pre-emergence weedkiller; Aramite, a miticide, and maleic hydrazide, a growth regulant. A sixth chemical, Duraset, will also be available on a limited commercial basis this season. Another form of growth regulant, it prevents blossom fall on such plants as lima beans.

These chemicals were also developed since 1942 when Naugatuck Chemical first entered the agricultural chemical field.

Mr. Steinen, formerly assistant sales manager, has been with Naugatuck Chemical since 1947. He is a graduate of the University of California at Los Angeles, and his job was technical representative for agricultural chemicals in the Los Angeles area. He held that position until September, 1956, when he was appointed assistant sales manager.

Gibberellic Acid Available from S. B. Penick & Co.

NEW YORK—The availability of the new plant-growth stimulant, gibberellic acid, was announced recently by S. B. Penick & Co., New York. The company said that initial work indicates that on certain flowers and ornamentals, gibberellic acid will stimulate stem length and lateral growth, accelerate stem growth on cuttings, increase profusion of blooms, stimulate earlier blooming, promote flowering of plants tending to remain in the vegetable stage and induce flowering of biennials in the first year.

Favorably affected were such plants, shrubs and trees as African violet, begonia, Boston ivy, dahlia, geranium, holly, hydrangea, juniper, red-leaf Japanese maple, petunia, Virginia pine, poinsettia and salvia.

Gibberellic acid was isolated by Japanese scientists working on the prevention of a rice disease. Further work by U.S. agricultural scientists indicated that in only three to four weeks plants treated with the chemical grew three times as tall as comparable untreated plants, Penick said.

Further information about gibberellic acid may be obtained from S. B. Penick & Co., 50 Church St., New York 8, N.Y.

Frank Maxey Named To New Post with Frontier Chemical Co.

WICHITA, KANSAS — Frank Maxey has been appointed products manager for agricultural chemicals for Frontier Chemical Co., effective Feb. 1. His headquarters will be in Frontier's general offices in Wichita. W. R. Pierre, former sales coordinator, will replace Mr. Maxey as sales representative in the Dallas, Texas area.

The appointment follows an increase in the range and volume of agricultural chemicals produced at the Wichita Frontier plant, according to the firm. The company is now contracting to deliver both 36 gamma technical and 13 to 15 gamma benzene hexachloride during the 1957 season. Completion last year of its chlorinated solvents plant also provides a source for "substantial quantities of carbon tetrachloride for grain fumigation, in addition to other hydrocarbon products," the company said.

Mr. Maxey has been associated with Frontier since January, 1956. He holds a B.S. degree in general science, chemistry and business. He is a graduate of St. Joseph Junior College, St. Joseph, Mo.; Marquette University, Milwaukee, and Northwestern University in Chicago. Before joining Frontier Chemical Co., Mr. Maxey was chemical products manager for Sharples Chemicals, Inc., a division of the Pennsylvania Salt Manufacturing Co. He is married and has three children.

Before joining Frontier, W. R. Pierre was with the W. C. Norris Co. of Tulsa. He was also sales representative for General Chemical Division of Allied Chemical and Dye Corp. in St. Louis. Mr. Pierre is a graduate of Trinity College in Hartford, Conn. He and his wife and two children will make their home in Dallas.

WHITE RUST OUTBREAK

COLLEGE STATION, TEXAS — Weather conditions over the past few days have been favorable for the development of white rust disease on spinach, especially in the Gulf Coast area. Dr. Harlan E. Smith, Texas A&M extension plant pathologist, reports at least one major outbreak and that other smaller occurrences are being watched very closely for build-up and spread.

Edward R. Pullen

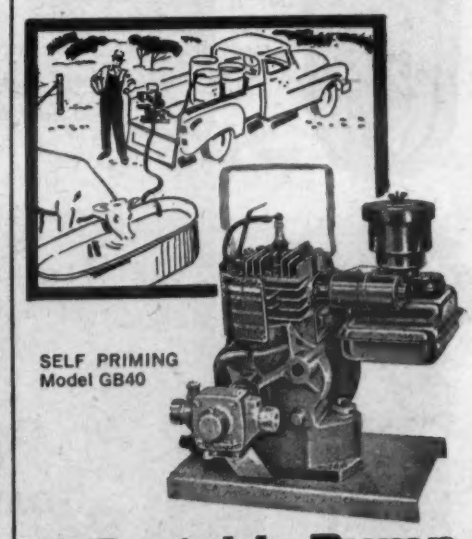
MONSANTO APPOINTMENT—Edward R. Pullen of Portland, Ore., has been appointed northwestern sales representative for the farm chemicals marketed by Monsanto Chemical Company's Organic Chemicals Division at St. Louis. Operating from offices in Portland, he will be responsible for Monsanto's farm chemicals distribution in the four-state area of Oregon, Washington, Idaho and Montana. Prior to joining Monsanto last December, Mr. Pullen was associated for 14 years with Van Waters and Rogers of Portland, distributors of agricultural chemicals and fertilizers. A native of Portland, he lives with his wife and two daughters at 7223 Southeastern Alder St.

Geigy Appoints Ashcraft-Wilkinson

NEW YORK — Geigy Agricultural Chemical has announced the appointment of Ashcraft-Wilkinson Co. as sales agent in Florida for its Sequestrene iron chelates used in the fertilizer industry.

Geigy introduced its Sequestrene NaFe iron chelates for the correction of iron chlorosis in citrus several years ago and during the past year introduced Sequestrene NaFe iron chelate pellets.

Geigy will continue to maintain stocks at the Robertson warehouse in Orlando and Flag Sulphur and Chemical Co. in Tampa.



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SKILL, WORK AND LUCK

Campaign Against Medfly in Florida Reaches Final Stage

WASHINGTON, D.C.—USDA officials, responsible for the program to eradicate the Mediterranean fruit fly in Florida, state that the final clean-up stage is beginning. A recent discovery of synthetic material to replace angelica-seed oil in insect traps has been a telling step toward ridding Florida of this dangerous pest, USDA says.

That research skill, hard work and "good luck" have all played a part in the good results achieved thus far against the Medfly was pointed out by USDA. The Medfly population in Florida has been drastically reduced, they report.

Credit for major assists in the campaign is due to opportune findings by USDA researchers that made new insect attractants available for use against the fly.

First of these was the discovery—only a few weeks before the insect was found in Florida last April—that oil of angelica seed is an excellent attractant for male Medflies. Used in special fly traps, this oil made it possible to determine quickly the extent of Medfly infestations, and so effectively guided the control measures taken against this pest.

A second stroke of good luck—also made possible by intensive research—was discovery of a synthetic attractant to replace angelica-seed oil in the survey traps. This finding came just when supplies of the relatively scarce seed oil began to dwindle. A development program was quickly organized under which the Carbide and Carbon Chemicals Co., New York, began making the synthetic attractant in quantity on a "crash" basis. First deliveries of the commercially produced synthetic were made in Florida in mid-December, shortly before thousands of Medfly traps would have run out of the natural attractant.

Success of the large-scale aerial spray program against the Medfly also depended upon timely development by USDA entomologists of an attractant bait material, made from yeast, which was mixed with malathion to provide an effective bait spray, deadly to Medflies but harmless to humans in the concentrations used. Because of this yeast attractant (enzymatic protein hydrolysate), the spray itself does not have to hit the insects. They are lured to the bait, which is sprayed with the insecticide on vegetation in the infested areas.

Although Medfly eradication in Florida has depended mainly on large-scale aerial spraying, done by both multi-engined aircraft and light planes, it also included use of ground-operated mist blowers to apply baited malathion where aircraft spraying was impractical, and application of granulated insecticide (dieldrin) to the soil under known host trees to destroy insects entering or leaving the soil.

Effectiveness of the spraying program depended on rapid and accurate determinations of the presence of the Mediterranean fruit fly in particular areas. This was made possible by the use of some 50,000 insect traps, baited with angelica-seed oil (and later with the synthetic substitute material). Lured into the traps by the attractant, male Medflies revealed the presence of their kind. Results of trapping surveys told the State and Federal entomologists conducting the campaign where to concentrate aerial and ground sprayings with malathion to kill Medflies of both sexes still at large.

Less than a month before the Medfly outbreak developed in Florida, workers under L. D. Christenson at USDA's Fruit Fly Research Laboratory, Honolulu, Hawaii, discovered that angelica-seed oil, normally used in liqueurs and perfumes, was an effective attractant to male Medflies.

Derived from the seeds of a plant related to the carrot, this oil is extracted largely in Belgium. It sells normally for about $50 a pound, and annual use in the United States for ordinary purposes seldom exceeds 2 to 3 pounds. World production of this oil has been limited to about 600 lbs or less a year.

With the limited quantity available and emergency demand for use in the fruit fly eradication program ranging up to 200 pounds a month, the price was forced upward.

At the height of concern over the rapidly dwindling stocks of angelica seed oil, S. I. Gertler, USDA chemist at Beltsville, Md., discovered a series of new acid esters, which tests in Hawaii showed would attract the Medfly. Of these, the isopropyl ester of 6-methyl-3-cyclohexene-1-carboxylic acid proved best. It was labelled "ENT-21,478," to distinguish it from a host of other synthetics being developed and tested, and was first made by W. F. Barthel at the Beltsville laboratory in the substantial quantities needed for field testing.

The synthetic, though not as effective as angelica-seed oil, works better than other materials tried so far. And it has the advantage of a more favorable price per pound than the seed oil, offset in part by the need to use more of it per trap. It also has greater uniformity and stability than natural attractants usually possess, since the material can be reproduced to exact formula.

Discovery of the attractant properties of both angelica-seed oil and the synthetic ENT-21,478 was a result of continuing efforts by USDA research entomologists to test many different natural and synthetic substances for possible value in insect control. Experience in using attractants against the Medfly, and also against other serious insect pests — including the oriental fruit fly and the melon fly — indicates that use of these materials with suitable insecticides may open up new possibilities for more effective insect control.

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Use
DAVISON'S
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Superphosphate
State Agricultural Experiment Stations and other authoritative sources are recommending fertilizers with ever increasing plant food units per ton. High analysis fertilizers are in demand because they give more for each fertilizer dollar. Meet this demand by incorporating Davison's New Triple Superphosphate in your formulation.
Davison's Triple Superphosphate has 45/46% available P_2O_5 and is supplied in the easy-to-use granulated form or run-of-pile.
Order Davison's Triple Superphosphate. For complete information, call or write.
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PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, TRIPLE SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS AND SILICOFLUORIDES. SOLE PRODUCERS OF DAVCO® GRANULATED FERTILIZERS.

Solutions Available In New-Size Drums

ROCHELLE, ILL.—Campbell's Gro-Green Balanced Fertilizer Solutions and other basic formulas with the ingredient "Foliage Dietene" are now available for commercial growers in 30 and 55 gallon drums, according to the H. D. Campbell Co., Rochelle, Ill.

DOW DIVIDEND

MIDLAND, MICH.—The board of directors of the Dow Chemical Co. has declared a dividend of 30¢ a share on its common stock payable April 15, 1957, to stockholders of record at the close of business on March 15, 1957.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

There's an opportunity for the fertilizer trade to help expand he acreage and per-acre production of alfalfa in Vermont, points out he Vermont extension service in its publication, "Dealergram."

Dealers have a real obligation to customers to help them do etter, it is pointed out. Dealers have lime, fertilizer and the new arieties to help farmers. The extension service has provided another id in the form of the 1957-58 recommendation chart prepared by the niversity of Vermont. The chart is highly readable and printed on eavy paper stock so that Vermont dealers can place it on their ulletin boards or on a desk and it will withstand considerable abuse.

Only 37% of Vermont farms grow alfalfa and an average yield f only two tons an acre indicates that many farmers are not now rying to grow it or not doing all they an to produce high yields, the bul-tin says.

The use of lime, based on soil tests recommended, and a last paragraph eminds dealers to give this advice to heir customers:

Always plant an adapted variety est suited to the need.

Better use plenty of lime and ferti-zer.

Cut early. Use the first crop for ilage and aftermath for hay.

Don't overgraze.

We will bet more farmers can grow nore alfalfa in more fields than they o now. Want to bet?

ight Product Used Right

Selling the right product to the ight person for the right use is No. 1 n the list of suggestions which one etail trade observer offers to deal-rs. To accomplish this, the dealer ust know his products. A dealer ho knows his product well will sell is customer only what he needs and chieves what is called customer sat-faction, this observer says.

A dealer who wants to make sure of customer satisfaction will tactfully ask what the customer intends to accomplish and won't sell a product which is not intended to do that job.

Make sure the product is good hen it leaves the store, the expert dvises. Nothing upsets a customer ore than having to return a pur-hase which won't work or do the ob.

Courtesy gets top billing at all suc-essful retail stores. Successful deal-rs never fail to acknowledge any rospect, whether he buys small quan-ties or large lots. A good dealer lways has a cheery "Good morning" r "How are things going?" for veryone.

A consistent and continuous ad-ertising program is essential for a etailer to be successful. Money can e saved by tightening up money andling practices and over-lenient heck cashing practices. Deliverymen nd route men can become more ales minded" and pick up extra rders by suggesting merchandise to rospects. Remodeling must not be elayed too long but it need not be ne overnight. It can be done step-y-step. A gallon of paint covers a t of wall space and adds a gleaming ew look to a store. Store housekeep-g must not be neglected.

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

Hitch diplomacy to the plow . . . A. Lincoln would have said, "plow around it," and George Washington would have said, "plow around it and then sow grass."

The world has many knotty problems, as of this year 1957. Diplomats, ministers, state department officials, ambassadors, admirals and special envoys are flying here and there, consulting and maneuvering to stop aggressors that endanger the free world.

We are wondering if a good bit of the world's troubles are agricultural, rather than political or military. The people in a good many countries, other than ours, are hungry. They don't want to fight and die . . . neither do we.

Consider the world's population . . . 70% of the entire population of the world living on the land . . . while in the United States the percentage is only 13% . . . and a surplus of food . . . Maybe it's a good thing that we have a surplus.

Most farmers work 60 hours weekly, while most industrial workers put in 40 hours. What would happen if farmers worked 40 hours and industrial workers worked 60 hours every week?

We talk about steel, tanks, jets and industrial capacity . . . maybe we are overlooking our agricultural capacity . . . maybe America should employ some agricultural ambassadors . . . men with that common touch . . . men trained to deal with the common man . . . men accustomed to the common man's problems . . . No man is as great as mankind . . . man is tied to the ground; half dust; half deity.

Pennsylvania Dealers Hear Talks on Proposed Change In Fertilizer Guarantees

UNIVERSITY PARK, PA.—Placement and management problems for lime and fertilizer were featured topics during a salesmen's conference recently at the Pennsylvania State University. Attendance reached 150 delegates from 62 companies in 11 states.

A major topic concerned the problems to be faced in a possible change from the present oxide basis for fertilizer guarantees to a basis featuring the elements nitrogen, phosphorus and potassium (N-P-K). An extension worker's viewpoint was expressed by James H. Eakin, Jr., associate professor of agronomy extension.

"Before any change is considered seriously, much spade-work with those involved must be accomplished," Mr. Eakin stated. "Communications between the fertilizer manufacturers, state experiment stations, county agents, farmers and others must be increased so that people concerned can speak from knowledge and not from ignorance and hearsay.

"At the present time there are too many rumors, conflicting statements, and plain lack of information concerning the meaning of this proposed change. If the program succeeds, it will result from (1) a good basic understanding of how the change-over is to be accomplished and (2) an appreciation of the problems that certain individuals, agencies and industries will meet before and after the transition period."

An experiment station research viewpoint regarding a possible change to an N-P-K guarantee was given by Donald P. Satchell, assistant professor of soil technology at Penn State. Mr. Satchell said he thought an N-P-K guarantee would work a hardship on the suppliers of raw materials who would not have the normal period for readjustments. He said there is also concern that it would favor the introduction of high analysis fertilizers simply because of analysis, without regard to agronomic or economic reasons.

"It is obvious, I think, that the change would be beneficial to agronomists," Dr. Satchell commented. "It would be extremely interesting to see the results of a survey of county agents, fertilizer dealers and other people at the grass roots. This is where the real problems associated with the change exist."

"Lime is the first need of forage crops and uniform spreading is very necessary," Lawrence F. Marriott, assistant professor of soil technology pointed out.

"Nitrogen may be supplied by legumes in grass mixtures but phosphorus and potassium must be maintained if large crops of hay or its equivalent in grazing are to be removed. Split applications are recommended."

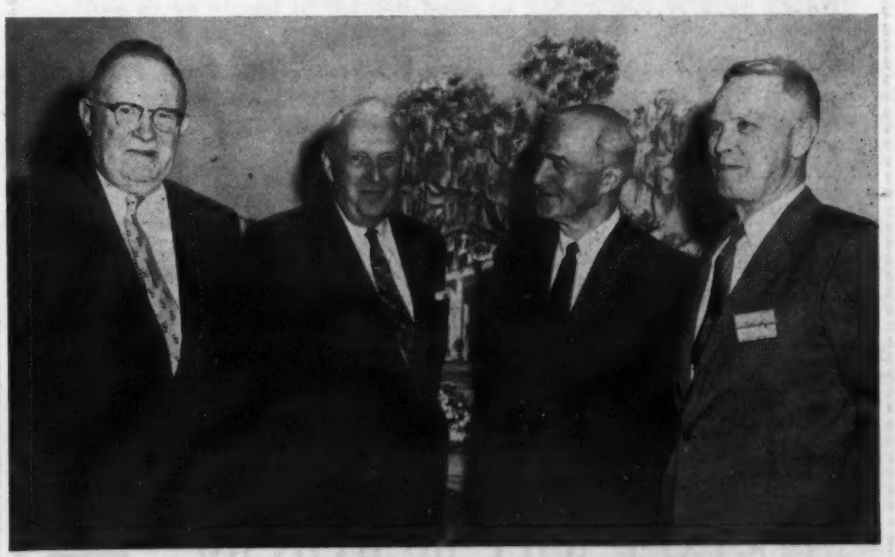
In experiments with forage crops, liquid fertilizers have been as good as those in solid carriers, Mr. Marrott said.

Fertilizer has been successful in raising the protein content of grass, he noted. Tests in Tioga County, Pa., in 1955 and 1956 almost doubled timothy yields where 200 lb. per acre of nitrate nitrogen were compared with plots having no nitrogen. The protein content of the fertilized hay was 11% in 1955 and 15.9% in 1956—comparable to legumes. Protein content of the unfertilized hay was 6.1% in 1955 and 9.1 in 1956.

James O. Dutt, extension professor of vegetable gardening, said recent experiments indicate that a fertilizer having a 1:3:1 ratio, such as 8-24-8 or 5-15-5, is particularly useful in fertilizing vegetable crops. This is because Pennsylvania soils, in general, are still low in available phosphorus.

C. Marshall Ritter, assistant professor of pomology, spoke on orchard

(Continued on page 14)



AT PENNSYLVANIA CONFERENCE—Leaders in industry and education attended the conference for fertilizer and lime salesmen at the Pennsylvania State University. Among those attending the conference banquet were, left to right, Arthur A. Schultz, president of Reading Bone Fertilizer Co., Reading, Pa.; Lyman E. Jackson, dean of the College of Agriculture at Penn State; banquet speaker Firman E. Bear, editor of Soil Science and emeritus professor of soils at Rutgers University, and Howard B. Sprague, head of the department of agronomy at Penn State.

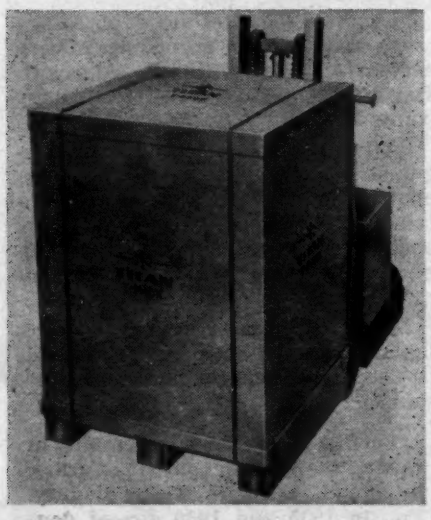
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5644—Bulk Materials Container

A new self-palletized and expendable bulk materials container called the T-Pack has been introduced by the Titan Pallet Co. Internally supported, the T-Pack includes a lid



which can be strapped or taped for security (see photograph). It is designed to accommodate up to a ton, depending on material density, and is proportioned to stow snugly in standard boxcars and trailer trucks. Standard specifications are 35 in. by 35 in. by 48 in., which can be varied on particular requirements. The new unit is claimed to provide all the advantages of expendability, product protection, economy and handling savings. Complete information on the container may be had by checking No. 5644 on the coupon and mailing it to this publication.

No. 6536—Pesticide

A new pesticide called Crag Brand Mylone is now being used experimentally to combat three pests that plague growers of nursery stock, tobacco, vegetables and some flowers. The three pests are weeds, nematodes, and several soil diseases. Mylone, formerly called fungicide 974, was developed by Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. It is applied before planting either as a water suspenson or dry powder and thoroughly tilled into the soil. Crag Mylone does not require plastic covers. Qualified researchers can obtain test quantities and detailed literature. Check No. 6536 on the coupon and mail it to Croplife.

No. 6537—Apple Mildew Film

Apple mildew is the theme of a new, educational 16 mm sound motion picture, in color, produced by the department of plant pathology of Cornell University in cooperation with the Rohm & Haas Co. The film, which runs about 15 minutes, depicts the damage caused by powdery mildew and the geographical distribution and climate factors involved. The life cycle of the disease is shown in detail, considerable footage being devoted to photomicrography of infected buds and the conidial and perithecial stages. The importance of thorough and timely spraying for effective control is shown and the film suggests to apple growers that they consult their local extension service representatives or state experiment station for detailed recommendations. The film is intended to be of particular interest to fruit growers, pesticide dealers, gardeners, county agents, vocational agriculture teachers and students. The film is suitable for television presentation and for showing at meetings sponsored by public agencies. Secure complete information by checking No. 6537 on the coupon and mailing it to Croplife.

No. 6538—Safety Folder

United-Heckathorn is now offering, free of charge, a revised edition of a wallet-sized safety folder including a revised list of antidotes for all the agricultural chemicals. The list contains antidotes for the newer agricultural insecticides such as Phosdrin, Thimet and Guthion. A new section concerning disposal of empty containers is included, together with a list of the latest approved safety equipment for handling of agricultural chemicals. Secure the folder by checking No. 6538 on the coupon and mailing it to Croplife.

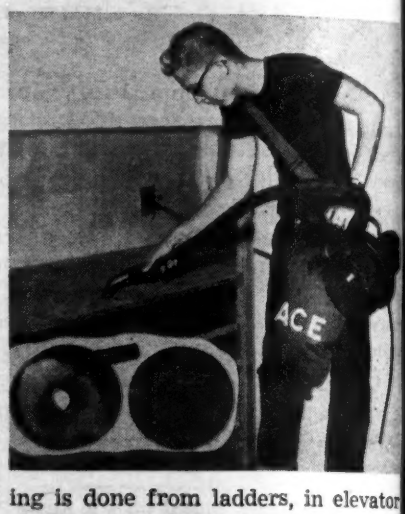
No. 6528—Tractor-Shovel Attachment

The Frank G. Hough Co., subsidiary of the International Harvester Co., announces that the entire line of four-

wheel drive "Payloader" tractor-shovels will offer "Drott 4-in-1" buckets as optional equipment. The identification "4-in-1" implies that the attachment can be used as shovel, clamshell, scraper or bulldozer, according to the company's announcement. Additional information may be obtained by checking No. 6528 on the coupon. Clip and mail it to Croplife.

No. 5645—Blower Attachment

A new attachment for Ace portable electric blowers is designated as Fangard attachment No. 226, announces the Ace Co. Used in connection with other available suction attachments the unit converts the blowers into limited capacity tank type industrial vacuum cleaners. Nuts, screws, washers and scrap can be picked up safely without danger of damaging the fan or fan housing, it is claimed. "The complete portability of this type unit is important where clean-



ing is done from ladders, in elevator shafts or other places impossible to reach with conventional tank type industrial vacuum cleaners," say company officials. A catalog is available without charge. Check No. 5645 on the coupon and mail it to this publication.

No. 6530—Portable Steel Bin

A new portable steel bin for storage and shipment of granular or powdered materials has been announced jointly by the Delta Tank Manufacturing Co., Inc., and the chemicals divisions of the Food Machinery & Chemical Corp. The multi-purpose weatherproof bin is trade-named the "Deltainer" by the Delta firm and

forms the basis of Food Machinery & Chemical Corporation's "Uni-Hopper" system for shipping. "When shipped by truck or on specially designed freight cars, the bins are considered part of the carrying vehicle and thus qualified for transportation without freight charges on the bins," according to spokesmen for the companies. Each container is removable for loading and unloading purposes. Three sizes of containers—36, 65 and 88 cu. ft. capacities—are being built. Units may be stacked atop each other; 2 units will fit two abreast on special railroad cars and 10 will go aboard the average truck trailer bed, the announcement states. Two inverting machines have been designed to permit dumping by one operator. The units can be hermetically sealed for that many hygroscopic, hazardous or toxic materials may be shipped with safety, states the announcement. S

Send me information on the items marked:

- ☐ No. 5643—Catalog
- ☐ No. 5644—Container
- ☐ No. 5645—Attachment
- ☐ No. 6527—Additive
- ☐ No. 6528—Attachment
- ☐ No. 6529—Soil Fumigant
- ☐ No. 6530—Steel Bin
- ☐ No. 6531—Monthly Bulletin
- ☐ No. 6532—Bulletin
- ☐ No. 6533—Valve Manifolds
- ☐ No. 6534—Weed Control
- ☐ No. 6535—Crow Repellent
- ☐ No. 6536—Pesticide
- ☐ No. 6537—Film
- ☐ No. 6538—Safety Folder

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Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

ure complete details by checking No. 530 on the coupon and mailing it to his publication.

No. 6529—Soil Fumigant

New literature has been prepared by the Stauffer Chemical Co. about its soil fumigant, trade-named, "Vapam." The product will control perennial and annual broadleaf weeds and grasses including germinating seeds, soil fungi causing seed rot, damping-off and wilt, nematodes that attack plants and soil inhabiting insects, according to the literature. The literature has sections devoted to a description of the product, where it can be used, rate of application, how to use it, special problems in usage and safety precautions. Secure the literature by checking No. 6529 on the coupon and mailing it to Croplife.

No. 6532—Bulletin

The Velsicol Chemical Corp. has issued a new, 16-page bulletin covering technical aspects of the firm's line of solvents for herbicides and insecticides. The bulletin is designed as an aid to formulators in selecting appropriate solvents for the various insecticide and herbicide formulations. Velsicol claims the following specific properties of the solvents covered in the bulletin: (1) Chemical compatibility with herbicides and both synthetic and botanical insecticides. (2) A high solvency for insect toxicant materials and such herbicides as the 2,4-D and the 2,4,5-T esters. (3) Solutions of the insect toxicants and herbicides are stable over a wide temperature range. (4) The solvents have high flash points. (5) The solvents are non-corrosive to metals. (6) The high boiling range of these solvents (low volatility) favors the residual toxicity of the more volatile insecticides. For a copy of technical bulletin 214, "Velsicol Insecticide and Herbicide Solvents," check No. 6532 on the coupon and mail it to Croplife.

No. 6531—Monthly Bulletin

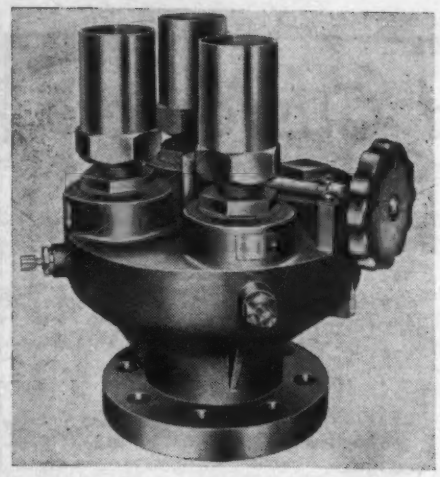
The Gates Rubber Co. has a monthly publication, Tank Talk, which is available without charge to those interested. The bulletin contains information about fertilizer solution storage. To secure the bulletin monthly check No. 6531 on the coupon and mail it to Croplife.

No. 6534—Weed, Insect Control

The Chemical Insecticide Corp. has prepared literature on its product, called by the trade name, Chem-Vape, recently introduced. The product is called a "one shot treatment for the control of weeds and soil borne insects and diseases." It is a dithiocarbamate liquid and "one application properly applied prior to planting will insure effective control of the various grasses and broad leaf weeds including the seeds of these vegetable pests. This same application will also destroy nematodes, insects and fungi which are found in the soil," states the company's announcement. The product is said to have a low toxicity to warm blooded animal life and leaves the soil in a relatively short period of time. It is available in liquid form packed in 55-, 30-, 5- and 1-gal. containers. Secure the literature by checking No. 6534 on the coupon and mailing it to Croplife.

No. 6533—Relief Valve Manifolds

Ample safety relief capacity for larger anhydrous ammonia bulk storage tanks is claimed in a new pair of relief valve manifolds introduced by the Bastian-Blessing Co. Designated the "RegO A7564 and A7565



Relief Valve Manifolds," each model has a cast steel body with three ports and three RegO AA3135 aluminum relief valves. According to the manufacturer, any two of these relief valves provide adequate relief capacity for all standard 18,000 and 30,000 gal. NH_3 tanks. Furthermore, it was stated, any one of the three valves can be replaced while the tank is under pressure, avoiding necessity for evacuating the tank while removing valves for replacement or testing. The company also states that each new manifold has ample openings through the manifold body to assure negligible capacity loss. Rate of discharge at the various relief valve settings is said to be 11,200, 11,640 and 12,160 CFM of air. The manifolds differ only in their bolt circle diameter. Secure additional details by checking No. 6533 on the coupon and mailing it to Croplife.

No. 5643—Equipment Catalog

A new 28-page sales catalog is now available to acquaint dealers and prospective dealers with the 1957 Midland Co. line. The new catalog covers in detail the new 3.6 H.P. riding rotary mower, four rotary mower models, 2 to 2¾ H.P., and eight tillers, ranging from 2¾ H.P. on up to 6.8 H.P., including riding tiller models. Interested dealers may obtain their free copy of the catalog by checking No. 5643 on the coupon and mailing it to this publication.

No. 6535—Crow Repellent

A deer and rabbit repellent which is marketed by Larvacide Products, Inc., has been found to be most effective as a crow repellent, according to advice from the company. The use of Larvacide's Z.I.P. for crows first became of interest in connection with experimentation by the Connecticut agricultural experiment station which was determining methods of reducing losses in the production of hybrid corn. Since then work also has been done at Massachusetts and Michigan experiment stations. Z.I.P. treatment of corn seed before planting will discourage crows from pulling germinating seedlings, company officials state. Information concerning the use of the product, method of application and other data may be had by checking No. 6535 on the coupon and sending it to Croplife.

No. 6527—Fertilizer Additive

A product called "FN-513," recommended as a fertilizer additive, has been announced by the agricultural division of the Ferro Corp. It should be mixed with fertilizer in quantities ranging from 30 to 50 lb. per ton, depending on the prevailing rates of fertilizer application. The product "maintains the fundamental slow-soluble safety principle of FTE" (fritted trace elements), according to the company's announcement. It contains 2.8% boron and 4.8% manganese. Secure complete details by checking No. 6527 and mailing the coupon.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

A nation-wide survey conducted by Croplife indicated that only two states (Iowa and Delaware) are expecting to consider the proposed model state fertilizer bill in the present sessions of legislature. A "wait and see" attitude appears to prevail, with many states saying that their own decisions will be based upon the action of neighboring and adjacent states. (Croplife Feb. 11, page 1.)

Fewer boll weevils have been counted in many cotton areas, but entomologists warned that hibernating weevils are still numerous enough to cause early-season trouble. Surveys were made in Louisiana, Mississippi, South Carolina, Arkansas, and parts of North Carolina. (Feb. 11, page 1.)

The California Weed Conference, held Jan. 22-24, attracted a record attendance of 600 to hear speakers from the University of California, the chemical industry, and agricultural experiment stations describe methods and materials for controlling unwanted vegetation. (Feb. 11, page 6.)

Brea Chemicals, Inc., Los Angeles, named Robert G. Hickle as assistant manager of agricultural chemical sales, as part of a general reorganization of its marketing area. Sales districts were increased from five to eight in the move. (Feb. 11, page 18.)

The number of plants producing granular mixtures of fertilizers nearly doubled within the past two years, according to figures released by USDA. The number increased from 80 in 1954 to some 150 in 1956, the report declared. (Feb. 11, page 1.)

Tolerances for Dalapon and Perthane were announced by the Food and Drug Administration. Dalapon may have 5 parts per million in or on sugar beets and sugar beet tops, and 35 ppm in or on cottonseed. Perthane was given a tolerance of 15 ppm in or on broccoli, Brussels sprouts, cabbage, cauliflower, cherries, kohlrabi, lettuce and spinach. (Feb. 11, page 1.)

An open hearing by USDA brought about the decision not to quarantine the Carolinas against spread of witchweed, a pest which uses corn plants as a host. Use of 2,4-D and cultural methods of rotating corn with soybeans were thought to be adequate control methods.

Farmers spent $1.1 billion to fertilize some 123 million acres in 1954, the U.S. Bureau of Census announced in February. The figures for 1954, just released, showed that 46.6 million acres of corn, 11 million acres of wheat, 9.7 million acres of cotton, 6.3 million acres of fruits, vegetables, and potatoes, and 13 million acres of hay and cropland pasture were fertilized that year.

The Pacific Northwest Farm Chemical conference, held at Portland, Ore., brought forth numerous reports on the use of insecticides, fungicides and weed killers. Speakers represented the agricultural chemical industry and the land grant colleges. More than 100 persons were in attendance.

That the potential 1957 crop of corn borers found in U.S. corn fields is smaller than that of last year, was announced by USDA. Although the North Central states showed reduced numbers of the pest, a build-up of the insect in eastern states was reported.

Keith Landsburg, Fennville, Mich., was elected to head the Michigan Insecticide-Fungicide Institute for 1957 at a recent meeting of the group.

Monsanto Chemical Co., St. Louis, came through 1956 with the best safety record in its history, the company announced. The accident frequency rate was .95 major injury per million man-hours worked.

Estimated consumption of fertilizer materials for the year ended June 30, 1956, indicated a drop of 2.8%. The report was compiled by Walter Scholl, Esther I. Fox, Hilda M. Wallace and Florence Grammatte, fertilizer and agricultural lime section, Soil and Water Conservation Research Branch, ARS, USDA. Consumption was estimated at 22,096,000 tons, which was 628,000 tons less than that of the previous fiscal year.

A new bill (HR 3011) was introduced into Congress to provide an acreage allotment of 51 million acres for the 1957 corn crop. An accompanying requirement was that 15% of such acreage would have to be placed in the soil bank as a condition of price support at $1.36 a bu.

Shell Chemical Corp. held a nematology workshop in New York, attended by some 200 persons. Present were pesticide formulators, dealers and allied personnel. Speakers included college plant pathologists and Shell technicians.

The President's budget message was interpreted to shed light on the Great Plains area where drouth conditions have all but killed agricultural sales. The new $20 million program over the Dakotas, Colorado, Kansas, Montana, Nebraska, Oklahoma, Texas and Wyoming is set for an indefinite period.

The Mississippi Insect Control Conference was held at State College, with speakers from the state experiment station predicting a much greater use of phosphates in boll weevil control in case heavy infestations build up on the 1957 crops. Warnings were also sounded as to the exercise of care in handling phosphates.

Farm Chemical Resources Development Corp., Denver, awarded a contract to MacKenzie & Whittle of Dallas, Texas, for digging a shaft into its potash deposits near Carlsbad, N.M.

Grasshoppers were said by USDA to pose serious threats to western and midwestern farmers and ranchers in 1957. Mormon crickets are also expected to become troublesome in a half-dozen western states, particularly Montana, Nevada and Wyoming, USDA said.

Dr. J. F. Fudge, Texas state chemist, told a group at the Texas Fertilizer conference that "If we moved the amount of nitrogen which farmers could use profitably, we'd be in short supply." The conference was held at College Station, Texas.

Turning Complaints into Profits

How to Treat Dissatisfied Customers

By Gerald D. Grosner

EDITOR'S NOTE: Customer complaints can be handled satisfactorily only if definite policies are laid down concerning them, and all employees involved kept fully informed, states Gerald D. Grosner, retail consultant and former retail merchant at Washington. Mr. Grosner claims that there are eight basic groups of complaints. The way complaints are handled can have a definite effect on business reputation and goodwill, and hence also on profits, he says. The accompanying article by Mr. Grosner is reprinted from a Small Business Administration bulletin.

Among the most difficult problems for the small business owners are the inevitable customer complaints. The ideal goal of any business is, of course, not to have any complaints at all. Since this is impossible, holding them to a minimum should be a prime objective of any business.

Probably the most important thing about a business is its "personality." That quality is determined largely by the type of service given by the store. Complaint handling is the acid test of store service, and in turn of store personality.

The principles of handling complaints are essentially the same in all lines of retailing. Men's wear merchants may talk of handling a complaint about the poor fit or wear of a suit for example, but the same approach also applies to firms dealing in farm supplies, electrical appliances, furniture, or other merchandise.

The methods of handling complaints can affect profits materially, and can eventually make or break a business. Certain firms have to go to greater lengths than others to satisfy their customers. For instance, a top flight, nationally-known store necessarily has to go to much more impressive lengths to satisfy a customer complaint than a "fifteen-foot-front" firm—because customers of the top flight store expect and demand more. The point is that both must do what is necessary to satisfy their own customer complaints.

Basic Groups of Complaints

Broadly speaking, complaints fall into eight basic groups. They are as follows:

(1) Faulty merchandise.

(2) Unsatisfactory installation, fit or adjustment.

(3) Delayed delivery.

(4) Wrong merchandise.

(5) Damaged merchandise.

(6) Office errors in billing charge accounts.

(7) Resentment of credit-collection methods.

(8) Dissatisfaction with sales people.

Store Attitude on Complaints

The quality which might be called "store attitude" is of great importance. Does the store obviously resent complaints, or does it accept them gracefully? The store's attitude is bound to be recognized by the customer. If the attitude is one of resentment, results are bound to be bad regardless of what the store does for the customer.

Where a customer has a legitimate complaint, the store is not only obligated to set it right, but should be glad to do so. Even where a complaint is not justified, the store, in order to protect its reputation, is obliged to consider the customer's feelings in the matter and act accordingly. In both of these situations, the customer learns by experience that the store is interested in serving him personally, rather than just in making a sale. As a result, in many cases, he becomes a "booster" for the store and recommends it to his friends, who become good customers, too.

In some stores, the adjusters make disparaging remarks about the customers or ridicule them, after they have left. Any store organization is quick to note and adopt this negative attitude towards complaints. Such an attitude soon becomes apparent in store operation and selling. On the other hand, if the complaint is handled in a cooperative spirit, this builds confidence in the store organization and provides the opportunity to stop complainants from "knocking" the business. Customers who are dissatisfied with the way complaints have been handled may voice their dissatisfaction to friends and acquaintances. This may discourage many prospective customers and prejudice some regular customers as well, thus injuring the store reputation and goodwill.

Method of Handling Complaints

There are various techniques for dealing with complaints. One store, for example, operated on the theory that 98% of all customers were sincere when complaining.

The manager figured that even if, technically, in some cases there was no basis for complaint, the fact that the customer was sincere compelled the store to make some sort of adjustment.

Whether or not you accept this theory, the first step is to get the complaining customer in a reasoning frame of mind. If possible, both the adjuster and customer should be seated, and the customer should have all the time he wants to explain his point of view.

One store owner says: "Let the customer get everything off his chest before you say anything at all. Don't blame the customer or argue with him. Suggest that you'll do something by way of adjustment, thus showing that you recognize the customer's rights and opinions. Usually, when a customer sees that the merchant wants to be fair, the customer tries to be fair, also."

Specific Examples of Adjustments

Several specific examples will help you to understand better the art of making wise adjustments. Fundamentally, the customer must always be satisfied. Half-way measures are worse than none at all. If you haven't satisfied the customer, anything you have allowed is money thrown away. It is better to be overly magnanimous than to drive away trade.

If a 50% allowance is not acceptable to a customer, ask him what he thinks is right. Then give him what he asks! Dealt with properly, most people try to be fair.

It is best to try to satisfy the customer with a replacement, rather than a refund. If the customer will not take a replacement at the time you might give him a "due bill" (specifying a dollar amount of credit in the store) with a three-to-six month expiration date. This reduces the adjustment cost by your retail markup and at the same time insures the customer's trade with you.

Now consider several common kinds of adjustment problems.

Unsatisfactory Service: In cases of this kind involving low-priced items, say up to $10 retail, it usually pays to offer complete replacement without delay. The cost of the article is too small to offer a partial allowance. Don't wait until you have consulted with the manufacturer. That way you lose all the benefit of making the adjustment. When the situation is managed tactfully, a customer will sometimes decide that the best way to solve the problem is to select a better grade article in place of the

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original one. The only cost is the difference in price between the two. Many times the customer will decide to buy other merchandise, also.

Conversely, on items over $10 retail, it is usually best to offer a partial price allowance. The amount of the allowance may be made on a length-of-time-in-use basis.

Of course, this policy requires some method of knowing the date of original purchase. With charge accounts this is usually simple. With cash sales, if other records are not kept, you might adopt a practice, where possible, of stamping or marking the date of purchase on the article in some inconspicuous place. The date of purchase is very useful because the customer almost always honestly thinks that the time that has elapsed since making the purchase is a good deal less than it actually is.

Improper Installation, Fit or Adjustment: Customer satisfaction on these three points is clearly a store's responsibility. Every effort should be made to correct completely any shortcomings. In cases where this is impossible, because of faulty material, poor installation or alteration, the item may be replaced. If a situation of this kind is not set right the customer often will voice his complaint to friends and possible future customers. The resulting damage to store reputation cannot be calculated. Hence, even though replacement may mean a big loss at the time, it engenders profit through good-will and confidence in the long run.

Where there are recurring deficiencies in quality, which are the manufacturer's responsibility, it pays to keep a record of the frequency of these difficulties. Whenever you have numerous customer complaints about fit, or installation, or adjustment resulting from poor make, you should consider seeking other manufacturers of the items concerned.

Delayed Delivery: Probably nothing is so annoying to a customer as delayed delivery, especially where the buyer is counting on using the article at a certain time, or has kept someone home to receive it. Prompt delivery is an important test of store dependability in the customer's eyes. His confidence in your store can be destroyed if deliveries are not made as promised.

The first step in avoiding delayed deliveries is to adopt a delivery schedule that you're sure you can maintain. Allow a margin of safety for possible contingencies that may arise. Don't shorten delivery-time promises unless you're certain the deviation you make can be carried out. Of course, with all these precautions, occasionally you'll miss. When you do, one solution is to rush out a duplicate item. Use a special messenger or even a taxi, if necessary.

If it is possible to correct the delivery delay in this manner, correct it the best way you can, but after it is corrected and the customer has had a few days to "cool off," a top store executive should apologize by telephone. If this is not possible, the executive should write a letter. One store in the Midwest sends a box of candy or flowers with a letter of apology. That's how important it considers a delayed delivery.

Even when the delayed delivery is not the store's error, the customer often feels that it is. This attitude must be accepted. In cases where the customer gives the wrong address and agrees that it was his error, the store should still do everything to correct the matter promptly. It is an opportunity to perform an unusual service, which is always beneficial to store reputation and good-will.

Wrong Merchandise: No matter whose fault it is, everything should be done to correct the difficulty as quickly and pleasantly as possible.

Office Errors in Billing Charge Accounts: Prompt correction as well as an apology by telephone or by mail is essential. Most customers today realize that this error sometimes occurs. Nevertheless, they are usually annoyed by such mistakes. Most of them will get angry when there is a delay in making a correction. The same bad-will develops when there is a lag in changing the customer's address.

Collection Methods: Another cause of complaints is resentment at credit collection methods. This complaint is very difficult to handle because it often has no reasonable foundation, and is used simply as an excuse for not paying the bill. Courtesy and patience are good guide words in handling these complaints. Likewise, be sure your collection letters are as tactful as possible. Of course, don't let your attempts to be courteous prevent you from trying to collect a delinquent account.

Dissatisfaction With Sales People: Fortunately, complaints about salespeople do not occur very often. However, they can occur with some of your most conscientious employees. Sometimes it seems to be due to a conflict in personalities between the salesperson and customer. Each case, of course, should be carefully investigated. Where there are no former complaints, ask the customer to permit another salesman to wait on him the next time he is in the store.

Both the original salesperson and the replacement should be advised tactfully of the situation. Naturally, if you get several complaints about one salesperson, it may be necessary to consider making a change. Remember that for every complaining customer there might be dozens who walk out and never come back.

Statistically, a large percentage of your complaints could arise out of exchanges. Exchanges occur all year and have a tremendous potential for making new customers and influencing old ones. For this reason it is wise to consider in advance the handling of exchanges in order to prevent them from becoming complaints—a transition which can easily happen.

During peak periods, exchanges will necessarily have to be handled by your regular sales force. The store owner should be present, however, to direct or help make exchanges personally.

Usually a customer can be persuaded to take another article, or a due bill valid for not more than six months. Your policy in this regard must, of course, take into account the policy of your main competitors. Also, if you follow a policy such as described here and a few exchangers occasionally insist on cash, you can still give it to them, without altering your basic policy.

Human nature being what it is, you're bound to run into some unreasonable customers, regardless of what you do, or try to do. A good basic policy to follow is that all complaining customers must end up pleased. However, if you notice that you are having continual complaints from one certain individual, you should review the situation. If you are not sure of the facts, you might keep a record on the customer.

One small store operator explains his procedure as follows: "If we finally found out that we just couldn't please a certain customer, we concluded that we were only taking on trouble and expense when we sold to him. In this situation, we instructed all of our salesmen to be tactful, but to be out of this particular customer's size, color, or item whenever he came in. Under no circumstances, were they to sell to him. Thus, the unreasonable customer could only complain that we didn't have the merchandise he wanted—not that we had mistreated him."

The Profit in Settling Complaints

Owners and managers of small stores will recognize that there is no immediate cash profit in settling complaints. Nevertheless, there are methods of reducing their actual costs.

For instance, all defective merchandise should be returned to the manufacturer for full credit. That return is due to his faulty merchandise, but correcting it has cost you in several ways. The remaining nondefective merchandise which is returned is usually due to your store's mistakes. The cost of correcting those errors should be your net expense. When totaled at the end of a year all adjustment costs should be trivial as compared with annual sales volume. Typically, adjustment costs will be only a fraction of 1%. On that basis, the resulting word-of-mouth advertising, good-will, and booster customers are actually a bargain. Moreover, some additional sales will have been made.

There is, finally, one other profit factor in settling complaints. It is an actual dollars-and-cents consideration. Most stores know without doubt that it costs a lot of money to get a new customer. After all, every dollar you spend—except for merchandise—is for the purpose of getting new customers into the store and bringing back as many of the old ones as possible. Thus, if you divide the total annual cost of doing business by the total number of customers during the year, the result will be the cost per customer. You'll find that this runs into quite a sum.

On this basis it is worthwhile to spend a few dollars to make a regular customer happy.

AG. ENGINEERING COURSE

TUCSON, ARIZ. — The University of Arizona next fall will offer courses in the college of engineering leading to the degree of bachelor of science in agricultural engineering. For the first few years the new major will cover just two special fields—farm power and machinery, and irrigation.

Mosquito Association Proceedings Available

NEW BRUNSWICK, N.J. — The printed proceedings of the 43rd annual meeting of the New Jersey Mosquito Extermination Assn. are now ready for distribution, according to Dr. Bailey B. Pepper, association secretary.

In its 212 pages the book contains discussions of mosquito control and related problems by 38 authorities representing seven states, the District of Columbia and Canada. Noteworthy among the papers presented is the annual "Review of Mosquito Work Around the World," by Miss Helen Sollers, Plant Pest Control Branch of the U.S. Department of Agriculture.

Many other topics are taken up, including mosquito breeding in salt marsh impoundments, the place of weed killers in a mosquito control program, new insecticides for control, mosquitoes as carriers of disease and public participation in mosquito control.

The book also carries a complete report of the business session of the New Jersey association. Copies may be obtained at cost from the Department of Entomology, Rutgers University, New Brunswick, N.J.

GREEN PASTURES OFFICERS

BARRE, VT.—Douglas Kitchel, Passumpsic, was reelected president of the Vermont Green Pastures Council Inc. here recently. Glen Button, Chelsea, was elected vice president.

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

When Oscar came home for a ham dinner that night, his wife Minnie looked worried. Oscar knew she was worried, but he said nothing. He took off his worn mackinaw and old felt hat, hung them on the elk head coat rack and came into the dining room and surveyed the dinner Minnie had spread out for him. Evidently it pleased him, for he grunted, then washed his hands at the kitchen sink, came back and sat down at the dining table.

"Oh, Oscar," said Minnie. "Uncle Emil didn't come yet. He said he would be here Monday night, and here it is Tuesday night. What shall we do?"

"Let's not talk about it until after the meal," Oscar commanded crisply. "I will not let anything about that foolish old uncle of yours spoil my meal. Maybe he just forgot what day it is and will come one day later."

Minnie wisely held her tongue, but she looked very worried and did not eat much. Oscar, however, took his usual portion of calories and perhaps 15% more, without worrying one bit about his pot belly.

At this point, there was a knock at the front door. Minnie answered it, almost rushing there. Then, later, she came back. "It was only someone soliciting for a magazine," she said, disappointment in her voice.

"Huh," said Oscar, "always they they want somebody to spend. People are crazy, Minnie. How many nowadays want to save?

"Looks like just you and me, Oscar," replied his dutiful wife.

"I think so," Oscar said. "We are schmart. And that Uncle Emil of yours. I will not be sorry if he decides to stay home this year. I do not like how he cuts trees for neighbors and yells 'Timber! Timber!' all the time. And he always asks me if I am still skinning farmers, and stuff like that. Then he sits and listens to the radio and them cowboy stories and yells like an Indian. No, he gets on my nerves. And he eats so much of our food."

There was another knock on the front door. Minnie rushed to it and opened it.

"Oh, Uncle Emil!" she cried, "I am so happy to see you. I—I thought something happened to you."

"Well, it almost did," growled the wizened, bent little old man with a wise face. "That durn railroad company, the way they run their trains so late. I told that conductor a piece of my mind. And the coaches so beastly cold in this winter weather. They got their nerve."

"Huh," said Oscar, "you got a free ride. You got a pass. Ach, what have you got to kick about?"

"Oh, hello, Oscar," grinned Uncle Emil. "Are you still skinning farmers as much as ever?"

Oscar's spine stiffened quickly. "We do not skin farmers at our store. We sell them good merchandise for a fair price. Remember that."

Uncle Emil grinned and winked. "Call it what you like, Oscar, that old pot of yours ain't getting any smaller. You must be getting lots of good food someplace."

"Oh, Uncle, would you like something to eat?" Minnie asked, trying to turn the conversation.

"Would I?" echoed Uncle Emil, rubbing his rough hands together. "I am just about starved. All I had was sandwiches the last two days on the train. I made them myself 'fore I left home and they was dry as the dickens".

"Two days!" Minnie gasped, pouring hot coffee into a cup. "Did it take you all that time to get to our town?"

"Why sure!" Uncle Emil said, blowing the intense heat off the top of the coffee and then sipping at the cup with flabby lips. "Did you think I was goin' to pay bus fare down here —at least $2.40—when I could get a free ride on my pass by going a little way longer around?"

"Well, you are a saver," Oscar conceded. "That is something."

"How did I know that they cut down on the trains a deadhead with a pass could ride on?" Uncle Emil said. "I had to travel 175 miles further on the train than on the bus, and I had to lay over in a lot of depots two and three hours till a train came along I was entitled to ride on with my pass—but I made it. Those railroad and bus companies ain't gonna skin me by asking me to pay fare—not when I got a pass, even if it ain't good on all trains."

"They don't want to skin you," Oscar said. "They want to charge passengers fare that ain't got passes, and that's fair. Ach, you had better not come to the store and yell about us skinning farmers on fertilizers. It's bad for business, and I won't stand for it."

With these words, Oscar got up and stomped downstairs into the basement. He fiddled around with the furnace and stayed a long time.

"What's the matter with him?" asked Uncle Emil, taking advantage of Oscar's absence to put about a sixteenth pound tab of butter on a piece of bread, much to Minnie's horror.

"Oh, when he's mad he always goes into the basement and stomps around," Minnie said. "He's worried about business and his partner Pat, and with everybody spendin' spendin' all the time — everybody but us. He'll be all right after a while, I think."

"Well I don't spend much," Uncle Emil said. "I ain't got it to spend. Just a little ol' railroad pension. But I still say, if I could find a nice little ol' widow who would work like heck for me, I might—" he grinned toothlessly.

"Ah, I feel better now, Minnie. You are a good niece. Well, how about turning on the radio? I'm lonesome for a good bang-up cowboy story with lots of shootin'."

"Yes, Alvin, I know you can't get married on the money I pay you and some day you'll thank me for it."

PLANT GROWERS MEET

DURHAM, N.H. — A Walpole florist, Philip L. Woodward, has been elected president of the New Hampshire Plant Growers' Assn. representing 150 seedsmen, box plant growers, nurserymen and florists in the state. Vice presidents are Lawrence J. Wood, Wolfeboro nurseryman; Roger Williams, Center Tuftonboro, box plantsman and Ernest A. Colprit, Dover seedsman. Secretary is Lawrence A. Dougherty, University of New Hampshire extension marketing specialist, Durham. John A. Leahy, Jr., Dover florist, is treasurer.

TICK-ERADICATION TESTS

LARAMIE, WYO. — The Wyoming Experiment Station will start new studies in the spring on dusting for the control of sheep ticks and wood ticks on sheep. Entomologists hope to develop an efficient method of dusting with hand dusters or shakers which will be economical for small-flock owners.

PENNSYLVANIA MEETING

(Continued from page 9)

fertilization. He said an orchard fertilizer program will be different than one for other crops, since trees reach far down into the subsoil for nutrients. Such a program should have two phases, one for the trees and one for the cover crop.

On fairly heavy soil, trees require in general one-fourth of a pound for each year of their age from a nitrogen carrier such as ammonium sulfate. The orchard should also receive 250 to 300 lb. of a complete fertilizer such as 5-10-10 or 10-10-10. Cover strips between rows of trees should be treated as other forage crops.

"If an orchard is allowed to develop symptoms of nutrient deficiency, it will take six or eight years of proper fertilization before the effects will appear in yields," Mr. Ritter said. "Of the major fertilizer elements, nitrogen is most likely to be deficient in orchard soils."

"If you expect to grow 100 bushels of corn per acre, you should remember that, besides high fertility, you must have a heavier stand of plants than is common in Pennsylvania," declared Dr. Satchell. He said an average stand is about 11,000 plants but he recommended 16,000 to 18,000 plants for heavy yields.

Research at Penn State showed the higher stands can grow 42 more bushels per acre than the average stands. Studies were made on the famous Jordan Soil Fertility plots using adequately fertilized hybrids. Inadequate fertility or inadequate liming delayed the maturity of the corn, Dr. Satchell added. This delay may be as much as a month.

F. G. Merkle, professor of soil technology at Penn State, discussed fertilizer practices with potatoes. Since some elements may accumulate in the soil and others do not, changes may be needed in the current application of fertilizer, he said. He recommended that soil tests be interpreted to choose the best type of fertilizer.

"Fortunately, potatoes will tolerate a wide range of soil acidity and plant food content," he said. "In some cases, however, soils have become too acid to grow the sod crop which is so important for the best growth of the potatoes which follow."

Mr. Merkle said growers should place more stress on deepening the topsoil by using well fertilized sods.

Grass Responds To Fertilizer in Pennsylvania Tests

UNIVERSITY PARK, PA. — Grass grown on a highly fertilized field will produce as much or perhaps more forage for hay or silage as grass is likely to produce when grown in association with legumes, according to Pennsylvania State University research.

The protein content of the grass from a well-fertilized area also may exceed that of the mixed grass-legume forage.

The information is drawn from results of experiments conducted by Dr. J. B. Washko, of the university's department of agronomy.

Most economical yields of dry hay or of protein were obtained in Dr. Washko's trials from yearly applications of 100 lb. of nitrogen per acre. Phosphorus and potassium needs were cared for in fall applications of 400 lb. of 0-20-20. Some indication has appeared in these tests of an advantage in splitting the nitrogen into two 50-lb. treatments, the first being applied in spring and the second following the first cutting of hay.

In these trials, per acre yields of forage and also of protein were higher from highly fertilized grass alone than where the same grass was grown with alfalfa.

Yields from the grass-alfalfa associations were higher than from grass-birdsfoot trefoil. Differences in yields among such grasses as orchard, smooth brome, timothy and reed canary were not great although orchardgrass headed the list. Yields from well fertilized plots were several times those from similar unfertilized areas on non-fertile soil.

Strawberry Disease Research Pays Off, Plant Pathologist Says

NEW HAVEN, CONN.—Patrick M. Miller, plant pathologist at the Connecticut Agricultural Experiment Station, discussed the several causes of blackened roots on strawberries as a speaker at the January meeting of the Massachusetts Pomological Society in Worcester.

Several different fungi are the most common causes of black root, Dr. Miller finds, and an effective fungicidal treatment of the soil usually gives control. Oxyquinoline sulfate as a soil drench has proven an effective treatment experimentally.

The fungi causing black root also grow on tomatoes and potatoes. The disease is often worse when strawberries are planted where those crops were grown the previous year. Among the other causes of black root are injury to runner plants before planting, nematodes, and low soil temperatures.

Dr. Miller also discussed his research on control of grey mold of strawberries. This disease, he found, spreads only short distances and does not move readily from one field to another. Thus the disease starts locally in each field, according to studies made with a spore trap that tracks down the fungus causing the trouble.

Excellent control was obtained experimentally with three sprays of either thiram or dichlone. However, Dr. Miller said that neither fungicide should be used by growers until the materials have been "cleared" by the U.S. Department of Agriculture for use on strawberries. When this has been done, the strawberry grower can spray thoroughly and early with either material, thin the plants so that the fruit dries quickly from morning dew, and stop worrying about grey mold, Dr. Miller said.

SCREWWORM INFESTATION

GAINESVILLE, FLA. — The present screwworm infestation in beef cattle herds in southern Florida is described as the worst in 10 years

FARM SERVICE DATA

Extension Station Reports

In their constant search for control of insect and disease pests and for new crop varieties the greatest problem faced by agricultural researchers is the lack of trained scientists. This is the message brought the New Hampshire Plant Growers' Assn. by Dean Harold C. Grinnell of the University of New Hampshire College of Agriculture at the group's annual meeting.

As director of the New Hampshire Agricultural Experiment Station, he pointed out the investigations being conducted at Durham aimed at improving quality of agricultural crops and marketing methods.

Keeping down the harmful insect population is a full-time job, Dean Grinnell said. He noted that the United States is fortunate to harbor only 10% of the known insects now attacking the World's crops. Scientists are vitally interested in keeping out or discovering and eradicating those pests which creep, crawl or fly over U.S. borders. The work and expense involved are very great, he noted.

And plant diseases cost American farmers three billion dollars last year, the agriculturist said. "We must encourage promising young men and women to join the ranks of entomologists, plant pathologists and botanists. They need our encouragement and inspiration," he concluded.

★

A continuous record of weather and apple scab spore discharge at Mt. Carmel (Conn.) Experimental Farm for more than two months last spring gives new information on spread of this perennial pest faced by apple growers.

The practical importance of this new information is that apple growers who keep their trees well sprayed and free from apple scab until June 1 can reduce the amount of fungicides added to sprays after this date.

Patrick M. Miller and Paul E. Waggoner of the Connecticut Agricultural Experiment Station began operation of a spore-trap apparatus on April 1. The first spore discharge from overwintering perithecia on the ground occurred on April 26, when leaves were in the delayed-dormant stage. Discharges started one hour after the start of rain and rose a few hours later.

At one time during the test on May 12 the spore trap showed as many as 21,000 spores in a cubic meter of air sampled 18 inches from the ground. Eighteen separate spore discharges were recorded during the test, most of them in May.

By June 2 and 3, during a long rainy period, the perithecia were still from one-quarter to one-third filled with spores. In spite of favorable conditions for spore discharge, these were not ejected into the air. They seemed to be of little importance as a source of scab infection.

The implication is that most scab infections after June 1 come from conidia, another kind of spore produced on leaves and fruit by the apple scab organism.

★

The decline of blackberry growing in New York state may be checked with the introduction of promising new varieties developed at the experiment station at Geneva.

One named variety, the Bailey, and a selection being propagated under number, are now available for trial. They appear to have sufficient merit to warrant trial plantings for market and home use," says Prof. George L. Slate, Cornell and New York State University small fruit specialist at the experiment station.

Blackberry growing in New York on a commercial scale has declined sharply in recent years, due largely to the difficulty of securing plants of good varieties that are true to name, declares Prof. Slate. Also, crops have often failed due to the feeding of the tarnished plant bug which results in imperfectly formed berries. This pest can now be controlled with DDT.

★

David G. White, pomologist at the Pennsylvania Agricultural Experiment Station, University Park, Pa., has reported on tests for what should be done to provide redder fruits.

Apples of the Delicious variety may be no more delicious if red than if green in color, Mr. White reports, but richly red Delicious apples are favored by many people. Apples of this variety have the advantage of being most readily induced to turn red, although Gravenstein and Lady also respond to treatments with certain chemical sprays. These same sprays are presently being used to prevent apples from dropping prematurely before they are sufficiently mature and highly colored.

For best results, stop drop-color inducing sprays must be applied to the tree while the apples are relatively green, 40 to 50 days before harvest, according to Mr. White.

One chemical, 2,4,5-trichlorophenoxypropionic acid, has been used effectively in a water spray by Mr. White and some commercial orchardists in Pennsylvania. If 2,4,5-trichlorophenoxyacetic acid is added in the right amount, the mixture may be improved in effectiveness, the researchers say.

These chemicals appear on the market as 2,4,5 TP and 2,4,5 TA. Proper amounts to use in apple sprays, according to Mr. White, are 20 parts per million of 2,4,5 TP when applied alone or 15 parts per million of 2,4,5 TP in combination with 5 parts per million of 2,4,5 TA.

★

Maryland farmers are beginning to show an increased interest in grain sorghums, reports Dr. R. G. Rothgeb, University of Maryland research agronomist.

He gives three reasons for this interest:

1. The state suffered some severe drouths in 1954 and 1955. Grain sorghums are grown primarily in semi-arid regions of the country and thus will produce a crop under drouth conditions where corn will not. In other words, grain sorghum needs less water than corn.

2. With corn acreage allotments in many counties, farmers are looking for a substitute crop.

3. The recent development of hybrid sorghums has received widespread publicity.

FLOWER GARDENING COURSE

NEW BRUNSWICK, N.J. — Rutgers University's College of Agriculture will give its annual one-week course in flower gardening Feb. 25 to March 1. Regular members of the College faculty deal with such topics as how plants grow, soils and fertilizers, propagation methods, insect and disease problems, care of woody plants, home grounds planning, lawns, house plants, annuals, perennials and bulbs.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

A campaign is underway to save elms on Martha's Vineyard and Nantucket islands off Massachusetts. The trees are threatened with extinction from Dutch elm disease, which has been traveling through New England. A warning that the beauty and charm of two world-famous island vacation spots will suffer irreparable damage unless residents awaken to the danger was sounded by Commissioner Francis W. Sargent, natural resources.

The Massachusetts commissioner disclosed the first known case of Dutch elm disease has been discovered in Tisbury on Martha's Vineyard and warned it calls for emergency action on the part of all residents of the island together with those of Nantucket. He said that thousands of elms, constituting a major part of the charm for vacationers on both islands "are doomed to destruction in the not too distant future unless the island residents themselves attend their respective town meetings and vote sufficient funds to combat the dread disease wherever it is possible."

Farm Income Outlook

New England farm income faces a mixed future with dark and bright areas, the Federal Reserve Bank of Boston reported in its latest Farm Finance News. New England dairymen can look forward to steady income. Poultrymen face a continued economic squeeze.

Broiler output this year promises to be higher than in 1956. Prices may rise slightly, but the market prices will be at, or only slightly above costs of production. Egg prices are now slightly lower than in the same month of 1955 and are not likely to rise in 1957. Springtime prices may average below those in 1956's spring.

"In the aggregate, agriculture is once again proving that it is a stable part of the New England economy . . . (New England farmers' ability to adjust to economic cycles) lends credence to the oft-repeated statements that good New England farmers on economic sized farms are likely to be reliable bank customers," the bank letter says.

Governor's Message

The new governor of Massachusetts, Foster Furcolo, in his message to the Legislature had this to say about agriculture in the state: "Many of us overlook the fact that there are many agricultural industries in Massachusetts which deserve the same consideration as we devote to our other industries. Few realize that the farmers of Massachusetts produce $200 million of new wealth annually from the soil. This has a salutary effect upon the economy of an industrial state, and its importance should not be underestimated."

Apple Market

The potential market for apples is greater now than at any time since the Second World War, said Frederick E. Cole, extension marketing specialist at the University of Massachusetts, in commenting on the apple market. He predicted that 1957 will be the "on" year for apple yields in New England following the short year in 1956. A full crop in 1957 should cause no concern to those orchardists with a planned sales program, he said.

Reason for the greater consumption of apples, he said, is the fact that the number of crop producing trees in the country has remained relatively constant over the past years, while population has increased. However, the volume of fruit produced since World War II has not increased, and since the population has risen, the per capita apple consumption has continued to decline.

Dutch Elm Disease

Greenfield, Mass. leads all the communities in Massachusetts in the control of the Dutch elm disease, it was announced as the fight against Dutch elm disease was being carried throughout New England cities and towns, threatened with loss of their venerable old elms. Tree Warden Weldon S. Campbell, a member of the Massachusetts executive committee, said the elm loss attributed to that disease in Greenfield is .2 of 1% of the town's 13,000 elm trees.

Fruit Growers Object

The Massachusetts Fruit Growers Assn. is on record as opposed to a plan under which orchard land used for fruit research at the University of Massachusetts would be taken for new dormitories. The fruit growers formed a special committee to protect the state's apple growers. They maintained that fruit research at the university is necessary "if Massachusetts is to maintain its position as an apple growing section."

TANKS FOR EVERY JOB
60-GALLON TO 22,000-GALLON CAPACITY
CHOOSE FROM THE Complete Broyhill ® LINE
the name that means CUSTOM QUALITY
There's a quality Broyhill tank in a size to fill every need for all forms of liquid fertilizer, insecticides, weedicides. Truck, tractor, trailer mounted, or on skids. Choose yours from—
STEEL OR ALUMINUM
Rubber Lining Available
COMPLETE CATALOG FREE—
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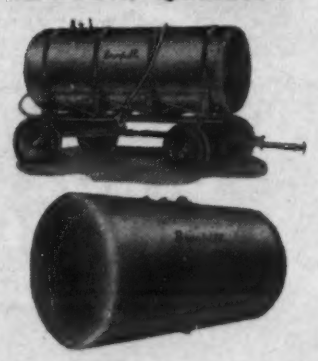
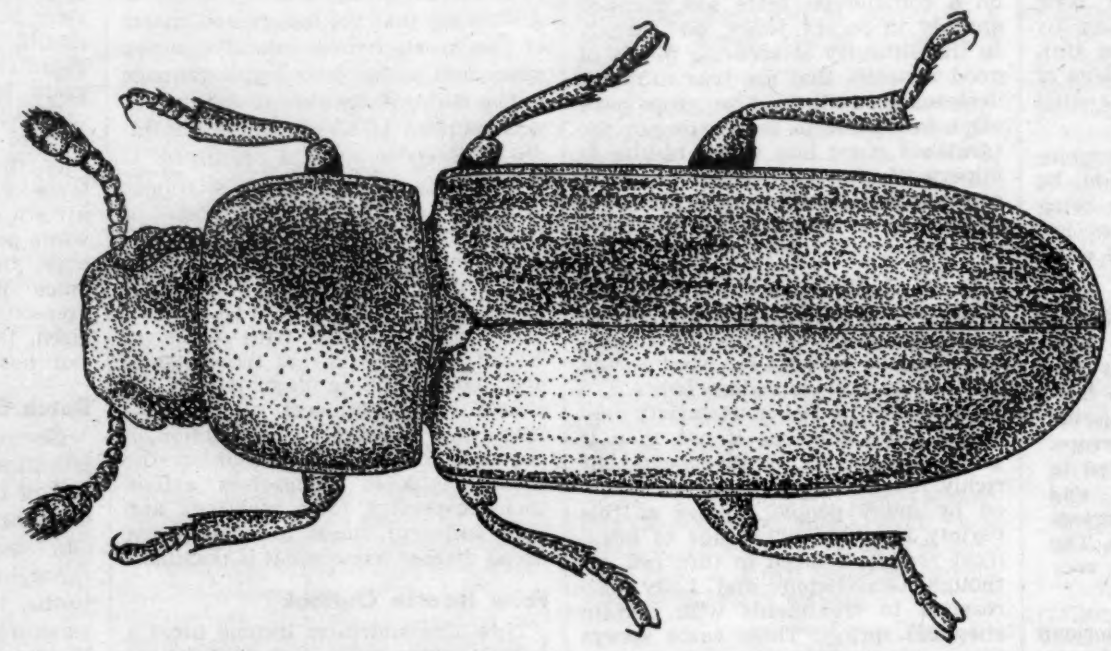


BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



Red Flour Beetle

How to Identify

This insect is so nearly like the confused flour beetle, that it can scarcely be distinguished from the latter except by examination under a glass. The end segments of the antennae of the red flour beetle are abruptly much larger than the corresponding ones on the confused flour beetle, which makes the red flour beetle's antennae look as though they are suddenly enlarged at the tip. In addition, the margins of the head of the red beetle are nearly continuous at the eyes, whereas on the confused beetle, they are notched and expanded at the eyes.

Habits of the Red Flour Beetle

As would be assumed by its name, this insect is a pest of grain and flour and spends its life in granaries, mills, warehouses and wherever grain or grain products are stored. The females lay an average of about 450 eggs each, and these small white eggs are laid loosely in flour or other food material where the adults live. Covered with a sticky secretion, the eggs become covered with flour and readily adhere to the sides of sacks, boxes, and other shipping containers so that fresh material placed in them is rapidly infested. The eggs hatch in from 5 to 12 days into small wormlike larvae; slender, cylindrical, and wiry in appearance. When fully grown, they are about 3/16" long, and are white, tinged with yellow. The larvae feed on flour or other material such as grain dust. When full grown, they transform into small naked pupae which are at first white, but gradually change to yellow, then brown, and finally become beetles. The elapsed time between egg and adult in summer, averages less than six weeks under favorable weather conditions, though the life cycle is greatly prolonged by cold weather.

Damage Done by Red Flour Beetle

The insect is found in practically all parts of the U.S., but particularly in the South where it causes very serious damage to grain products. In addition to its actual damage, it imparts a nauseous smell and taste to the material it infests. Investigations by USDA have indicated that these pests devour at least their own weight of food each week, and their larvae destroy many times their own weight of food during the weeks they are developing.

Control of Red Flour Beetle

Sanitation methods are, of course, of prime importance in preventing infestations. This includes the application of residual insecticidal sprays on walls and floors of empty bins. Materials mentioned include piperonyl butoxide, pyrethrins, Methoxychlor, DDT, TDE and fumigation materials. However, it must be kept in mind that any control methods must be in keeping with laws regarding residues on foodstuffs. Local authorities should be consulted for recommendations.

Illustration of Red Flour Beetle through courtesy of artist, Marvin Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

ALFALFA APHID

(Continued from page 1)

l trade association, the National ricultural Chemical Assn. has re- rted that its members have been oving aggressively to assist alfalfa oducers, and the 1956 sales volume pesticidal chemicals represented in rt increased sales in this area.

The spread of the insect is wind- rne. Reports from USDA officials at they have been found at heights much as 5,000 ft. indicate the agnitude of the problem of halt- g the spread.

Costs per ton to produce alfalfa y in stamping out this aphid rough the use of pesticides are esti- ated by USDA to vary between $1 d $7 depending on the number of eatments required and the per- ntage of a crop that is lost.

In 1956, according to USDA, the phid spread across the entire two- hirds of the southern states and s far north as the Dakotas, Min- esota and Wisconsin. Greatest amage to the alfalfa crop was re- orted in California, Kansas, Okla- oma and Texas. In the latter tates some of the damage to the lfalfa crop must be ascribed in art to drouth conditions.

However, pin-pointing the intensity the damage to the alfalfa crop Texas it is reported that there as a 50% reduction in crop out- rn from aphid-drouth damage. In klahoma the loss in yield from aphid mage is estimated to have been %.

In November, 1956, USDA report- that presence of aphids in Ne- raska and Kansas, indicated heavy opulations.

Commenting on known effective sticides for the aphid, USDA says at the ideal insecticide would be e which would kill it at lower mperatures such as 40° F. Now nown insecticides are generally ef- ctive only at 55° or higher, making ntrol difficult in early spring and te fall, USDA said.

USDA is developing research on stemic insecticides in a hope to oduce a seed treatment that would ake the plant poisonous to aphids uring its critical first weeks of life.

xemption of Some esticides from Utah ales Tax Approved

SALT LAKE CITY — With some fficulty Utah farmers obtained ouse approval of a bill to exempt me of their sprays and insecticides om the sales tax.

A representative from Millard ounty, where alfalfa fields are in- sted with dodder, said the maxi- um reduction in sales tax revenues ould be only $10,000 a year but that e bill would be an aid in some areas heavy infestation.

The bill would exempt sprays and secticides used for control of in- ct pests and diseases in commer- al production of fruits, vegetables d animal products.

A representative from Salt Lake ounty opposed the measure as a oothold" which could lead to similar emands for exemptions from other usinesses.

Another solon says the "agricul- ral business is in a tight squeeze tween high costs of production and w prices for crops." He adds that y help that can be given to agricul- re will strengthen the entire eco- omy.

lin Mathieson troducing New Grade

NEW YORK—A new grade of Am- o-Phos pelletized fertilizer, 8-32-16, being introduced to Midwest farm- s this spring, it has been announced G. A. Wakefield, director of sales the Plant Food Division of Olin athieson Chemical Corp.

Gloomicides

★

A talkative lady was telling her husband about the bad manners of a recent visitor.

"If that woman yawned once while I was talking to her," she said, "she yawned ten times, at least."

"Perhaps she wasn't yawning, dear," the husband said, "maybe she wanted to say something."

★

A woman reported the disappearance of her husband to the police.

"Is there any message you wish to give your husband if we find him?"

"Yes," she replied, eagerly, "tell him mother didn't come after all."

★

The grandmothers had been reading to the little boy from the ancient family Bible. "That Bible is older than I am," she told him, as she closed it and went out into the kitchen to make herself a cup of coffee. "It has been in our family for years and years." She left the little boy looking through the book with much interest. Then he came running to her, holding a dry, pressed leaf in his hand. "Look, grandmother," he cried, excitedly. "I just found this in the Bible. Do you s'pose it belonged to Eve?"

★

"Why did the foreman fire you?"

"Well, you know the foreman is the man who stands around and watches the others work."

"Yes, anyone knows that, but why did he fire you?"

"He got jealous of me. A lot of the fellows thought I was the foreman."

★

Strange how much you've got to know before you know how little you know.

★

Sunday school teacher: "Does anyone know who St. Matthew was? Well, then, who was St. Luke? . . . Surely one of you children can tell me who Peter was?"

Small voice: "I fink he was a wabbit."

★

A small town is usually a place that is divided by a railroad, a main street, two churches and a lot of opinions.

★

Reporter: "Do you believe in early marriage?"

Film star: "Certainly, I always have the ceremony in the morning."

★

There's one nice thing about a census. It elevates everybody to the important position of an official statistic.

★

She—Do you love me for myself alone?

He—Yes, and when we're married, I don't want any of the family thrown in.

NEW!

Traffic-Boosting Profit-Getter from SOHIO

Here's the new, high-nitrogen fertilizer that will bring in *new* trade for *new* profits from your fertilizer sales . . . NEW Sohigro Urea, the free-flowing, prilled, 45% nitrogen fertilizer from Sohio in the *bag that sells itself.*

The best all-nitrogen supplement for any complete line. Favored for all-season use and year-round sales. Best for plants . . . soils too! Produces top results for increased customer satisfaction.

For complete information, write the address below.

Get EXTRA profits through EXTRA sales with Sohigro

Sohigro Urea fits into your fertilizer sales picture as an ideal companion to your present grades. It's an all-nitrogen fertilizer that rounds out your line for extra profits for you . . . extra service for your customers. Here's how:

Sohigro is a free-flowing, leach-resistant concentrated 45% nitrogen fertilizer . . . quick-acting, long-lasting. It's safe to use in the whopping amounts needed for those top yields your customers have been reading about. It can be applied any way, with regular equipment. And Sohigro's a pleasure to put on.

Get set now. Stock Sohigro — the new urea, all-nitrogen fertilizer that will set sales records this spring.

SOHIO

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Wisconsin Corn Growers Find Full Treatment of Pesticides And Fertilizers Brings Results

MADISON, WIS.—Some 400 lime and fertilizer dealers from Wisconsin and Illinois, in addition to interested farmers, attended the annual Lime and Fertilizer Dealers program held in Madison, Feb. 4. The meeting was part of the University of Wisconsin's annual Farm and Home Week program, Feb. 4-8.

Following the morning meeting, the Pacemakers Corn Club met during the afternoon with about 350 dealers and farmers attending.

Chairman of the lime and fertilizer dealers program was John Murdock, University of Wisconsin soils specialist. He pointed out that the meeting had two general themes—1) to acquaint dealers with current research and soil fertility recommendations for the coming year, and 2) to impress dealers with the role they might play in Wisconsin agriculture.

Five speakers contributed to the morning program—four from the University soils department staff and one representing industry.

The industry speaker, W. R. Allstetter, vice president of the National Plant Food Institute, Washington, D.C., said the fertilizer industry is unique in that its major promotional efforts are directed towards further research and education programs of state land-grant colleges. He noted that this is simply a matter of good business because the more scientific job farmers do, the better outlook for the fertilizer industry as a whole.

Mr. Allstetter said he believes the prime requirement of any industry promotional program is to tailor it to fit the area where it is presented, and to further the interests of the industry's farmer-customers. The sound farming practices encouraged by both colleges and industry is a sign that industry-college cooperation will continue and be strengthened in the future.

O. J. Attoe, University of Wisconsin soils department, told of current soils research now underway in the state. It varies widely and is being carried out in the field, forest, greenhouse, and laboratory. The field work is going on at University farms, branch experiment stations, farmers' fields and state and privately owned forests. The research projects include soil acidity and lime use, fertilizer use, improved soil testing, the need for trace elements, work in soil physics, meteorology, and forest soil testing.

K. C. Berger, soils researcher, noted the role of trace minerals in fertilizer use in Wisconsin. He stated that trace elements needed for plant growth are copper, boron, manganese, zinc, iron and molybdenum. These elements exist in soils, but the available amount is only a fraction of the total present.

As with main elements, the rate or release from soil minerals and organic matter is often too slow to supply crop needs under present conditions. Crop removal, leaching and erosion have also added to widespread deficiencies that exist in Wisconsin, he said. According to Mr. Berger, trace element needs are increasing, and maximum yields cannot be harvested without them. When deficiencies are severe, yields are extremely low, he said.

The next University soils specialist to speak—L. E. Engelbert, brought home the importance of lime in fertility maintenance. On acid soils, proper liming is a key to a good soil fertility program, he declared. Besides supplying calcium and magnesium to the soil, lime makes many soil nutrients more available for plant growth and organisms. With the exception of potassium, most plant food in the form of manure and crop residue is unavailable to crops. It must be decomposed by soil organisms to release the nitrogen. Most studies show that nitrogen is released about twice as fast from fresh organic materials when acid soil is limed.

Mr. Engelbert cited research where liming of acid soils produced alfalfa with a higher protein content than did soils with no lime. Also, by reducing soil acidity, more phosphorus is released for plant use. In a 12 year test at Owen, Wis., corn yields were upped an average of 29 bu. an acre by the use of lime and fertilizer. Oats showed an 18 bu. an acre increase, and hay gains averaged just over two tons an acre. Lime was applied at the rate of four and a half tons an acre at the start of the tests and only on fertilized plots. At the end of the 12-year test period, the effects of the lime were still apparent, and returns to the farmer were large.

The last University soils specialist on the program was C. J. Chapman whose talk was titled "Food Unlimited." He told of new practices being developed to increase the country's food output yet keep its soil productive. He reported that an Iowa beef producer now markets beef without feeding any hay. The protein is supplied from a synthetic nitrogen source urea. He said some larger farming operations were doing away with legumes and substituting nitrogen fertilizer as a dependable and cheap source of this important plant food.

Prof. Chapman stressed that he was not advocating dropping long-time soil building and crop improvement programs through growing legumes, but, he said, "I am talking more about making every acre produce as large a crop as it is inherently capable of producing, within the limits of economy and possible returns on an investment in nitrogen fertilizer." He told of experiments on sandy soils at the Hancock Experiment Station in central Wisconsin. In that part of the state there are thousands of acres of land not producing more than 30% of total capacity. By increasing plant food and water, researchers have doubled and in some cases trebled yields of corn, potatoes, cucumbers and other crops.

Following the morning meeting, the afternoon session highlighted the meeting of the 1956 Pacemakers Corn Club—with most of the lime and fertilizer dealers attending. Top corn producer was Elmer Braun, Green County (Wisconsin) farmer, who had a yield of 186.9 bushels on an eight-acre field. Running a close second was Robert Lawrenz of Rock County (Wisconsin) with a six-acre field that averaged 186.0 bushels. Mr. Lawrenz was top producer among the junior entrants.

Average yield for the 575 corn fields entered in the program this year was 112.7 bu. an acre. Thirty-seven Wisconsin counties were represented.

The Pacemakers Corn Club was set up by University specialists to encourage more efficient corn production. "Prescriptions" are made out farm by farm for best yields. Farmers closely follow these recommendations and record production.

"Prescriptions" are tailored for 100 bushel an acre yields. Complete fertilizer needs, cultivation practices, insect and weed control methods and a heavy planting rate are taken into account by University specialists when making recommendations. Fertilizer is applied after a carefully taken soil test and high rates of seed are planted.

Farmers can qualify for the annual citations by producing 100 bu. an acre or 90 bu. in counties in the shorter maturity belt. The corn must be produced on a minimum of five acres and must receive an official harvest check.

JUNIOR CITIZEN

WOODBURN, ORE.—Lewis H. Hildebrandt, vice president and plant manager of Woodburn Feed and Supply, Inc., here, was recently named Woodburn's first junior citizen by the local chamber of commerce. His contribution to the community has been principally in connection with municipal affairs. Mr. Hildebrandt has been with Woodburn Feed and Supply for six years and during that time the company has constructed a new grain elevator, a wholesale liquid fertilizer and a dry fertilizer bulk mixing plant.

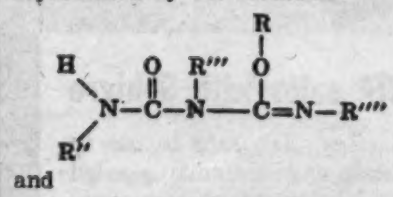
MINNESOTA SHORT COURSE

ST. PAUL—An aircraft sprayers short course will be held on the St. Paul Campus of the University of Minnesota Feb. 20.

Industry Patents and Trademarks

2,780,535

Carbamyl Pseudourea Herbicidal Composition and a Method for Killing Weeds Therewith. Patent issued Feb. 5, 1957, to Jack A. Snyder, Wilmington, Del., assignor to E. I. du Pont de Nemours & Co., Inc., Wilmington. A method for the control of weeds which comprises applying to a locus to be protected, in amount sufficient to exert a herbicidal action, an organo carbamyl pseudourea selected from the group consisting of compounds represented by the formulas



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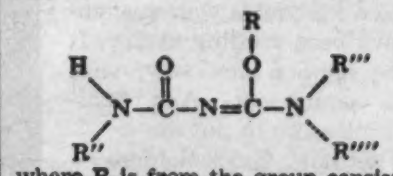


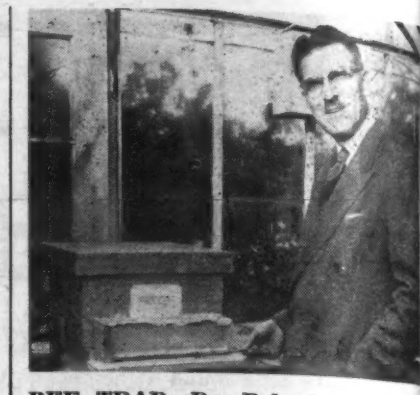
where R is from the group consisting of substituted and unsubstituted alkyl and alkenyl organic radicals of 1 to 4 carbons, R'' is from the group consisting of phenyl and substituted phenyl, and R''' and R'''' are from the group consisting of hydrogen and substituted and unsubstituted alkyl and alkenyl organic radicals of 1 to 6 carbons.

2,780,575

Polychlorinated Fluoranthene as a Parasiticide. Patent issued Feb. 5, 1957, to Eugene E. Kenaga, Midland, Mich., assignor to The Dow Chemical Co., Midland, Mich. A method which comprises applying to insects and their habitats and food a parasiticidal amount of a chlorine addition derivative of fluoranthene having an average chlorine content of from 6.7 to 7.1 chlorine atoms per mole and prepared by mixing fluoranthene with an excess of liquid chlorine at a temperature below -20° C. and under sufficient pressure to keep the chlorine liquefied, while exposing the mixture to diffused daylight at an intensity not to exceed 85 foot-candles.

MONSANTO APPOINTMENT

ST. LOUIS—John J. McKee of Atlanta has been assigned as a resident salesman at Charlotte, N.C., for Monsanto Chemical Co.'s Inorganic Chemicals Division.



BEE TRAP—Dr. Robert H. Daines of Rutgers University points to his unique bee trap used to control fireblight disease of apples and pears.

Powdered Bees Carry the Cure for Fruit Diseases

RAHWAY, N.J.—To prevent orchard pollinating bees from spreading fireblight to apple and pear blossoms, Dr. Robert H. Daines, plant pathologist at Rutgers University has come up with the idea of making the bees carry the cure instead of the disease.

He powders them with streptomycin, by means of a simple wooden trap inserted at the bee hive entrance. The bees can't get in or out without walking through the streptomycin, which clings to their bodies ready to kill or inactivate any fireblight-producing bacteria they might pick up as they gather nectar.

Dr. Daines and his associate, Dr. Michael Szkolnik of Cornell, report that they succeeded in reducing fireblight infection of pear blossoms from 40% to less than 1% in controlled greenhouse tests. The bees did not do as well in preventing the disease in apple blossoms. The scientists attribute this to the difference in flower structure.

The bee can land in the shallow nectar cup of a pear blossom feet first. The apple blossom, however, isn't so accommodating. Unlike pear blossoms, apple blossoms have stamens that are tightly clustered together around a deep calyx cup, which makes it more difficult for the bee to get into with his streptomycin-covered legs.

The plant scientists are attempting to solve this problem by nailing a cheese cloth net on the upper section of the trap and filling it with streptomycin dust. Now the bees won't only have to stomp through the stuff, they will have to rub against it in the net and take a streptomycin dusting all over.

Dr. Daines said the method is scheduled to be tested in orchards. Merck & Co., Inc. in Rahway, N.J., which makes the streptomycin product Agri-Strep for plant disease control, will provide technical assistance and assay work as it has since the project began.

George F. Knowlton Heads Spray Project

LOGAN, UTAH—Dr. George F. Knowlton, extension entomologist at Utah State Agricultural College, is the new chairman of the Northwest Spray Project, a cooperative program for control of insects and diseases of tree fruits.

He was elected at the project's conference at Portland, Ore., attended by entomologists from state colleges, state departments of agriculture and the U.S. Department of Agriculture. Dr. Knowlton will preside over the project's 32nd annual conference at Portland next year.

TOMATO DAY

DAVIS, CAL.—New disease problems and effect of fertilizer on quality of canned tomatoes will be among the topics to be discussed at Tomato Day, scheduled Feb. 20 on the University of California Davis Campus.

...izer Sales and ...rnings at Record ...vels in 1956

NEW YORK—Sales and earnings Chas. Pfizer & Co., Inc., manu-cturer of pharmaceuticals and emicals, established new records 1956, according to a preliminary ort issued recently.

Sales for the year reached $178,-0,000, up 9% from the $163,800,000 orted in 1955. Net earnings were 3,250,000 against $15,327,000, an rease of 19%. Earnings per share common stock after payment of eferred dividends were $3.36 per are on 5,284,543 shares outstand-g, compared with $2.94 in 1955 on 59,902 shares outstanding.

Earnings before income taxes were 22% from $26,571,000 to $32,400,-0.

Preferred stock outstanding was duced during the year from ap-oximately $19 million to $7 million rough repurchases and conversions to common stock.

The report showed an improve-ent of approximately $4 million in e company's cash and marketable curities position. Working capital creased more than $9 million and ood at approximately $72,700,000 the end of the year.

John E. McKeen, president, re-rted that all four of the company's mestic marketing divisions—Pfizer aboratories, J. B. Roerig & Co., hemical Sales and Agricultural les—and the international subsidi-ies contributed to the increase in les and earnings.

...ansas Irrigation ...onference Planned

MANHATTAN, KANSAS — More an 100 engineers, dealers, distribu-rs, and manufacturers of sprinkler rigation equipment, farmers, and ersonnel of government agencies e expected at a two-day confer-ce to discuss sprinkler irrigation stems at Kansas State College eb. 26 and 27.

Sponsoring organizations are the -State departments of agricultural gineering, agronomy, extension gineering, and continuing educa-on, in cooperation with the Sprink-r Irrigation association.

Topics to be discussed include atus of irrigation in Kansas, water sources and appropriation, soil d crop management under irriga-on, soil factors influencing design irrigation system, irrigation water pplies and surface supplies, ground ater supplies, choice of the irriga-on system, pump and power plant, rinkler system design, financing ir-gation systems, and operational oblems.

...orth Carolina Tonnage

RALEIGH, N.C. — North Carolina rtilizer shipments in December taled 43,325 tons, compared with ,152 tons in December, 1955, ac-rding to the North Carolina De-rtment of Agriculture. Shipments r the last six months in 1956 taled 216,234 tons, compared with 5,182 tons in a comparable period year earlier.

FARM FUND DRIVE

AMES, IOWA—A fund drive for a w agronomy research farm at Iowa ate College is little more than a rth of the way toward the goal of 25,000, H. D. Hughes, Iowa State ollege agronomist, said recently. He id $33,000 has been contributed so . The drive was begun last May a group of Iowa farmers and busi-smen who formed the "Iowa Crops d Soils Research Assn." for the rpose of raising money to help buy d for the proposed new agronomy rm. The association's goal of $125,-0 would be about a third of the timated cost of the visualized new rm, Mr. Hughes indicated.

Pittsburgh Plate Develops Fungicide for Apple Disease Control

PITTSBURGH—Development of a new all-purpose pre-cover fungicide to control major apple diseases in the fruit growing industry has been announced by the Corona Chemical Division of the Pittsburgh Plate Glass Co.

The new product to be known as Phybam-S has been field tested by many state experiment stations, according to the firm. Wide scale trial marketing with follow-up of fruit yield and finish has established the new fungicide as an "outstanding performer in controlling apple diseases such as cedar rusts, scab and powdery mildew," the company said. The new fungicide is micronized to a minute particle size.

Phybam-S is produced and packaged at the Corona Division in Moorestown, N.J., in 20-lb. bags which in solution provide fruit growers with 500 gallons of fungicidal spray.

Massachusetts Soil Conservationist Retires

AMHERST, MASS. — Dr. Arthur B. Beaumont, state conservationist of the soil conservation service since 1945 and for 25 years a member of the resident and cooperative extension service staff at the University of Massachusetts, retired Feb. 1.

Dr. Beaumont joined the university staff in 1917 as soils professor in the agronomy department, and served in this capacity and later as department head until 1935. From 1935-37, he was with the USDA resettlement administration in Oklahoma and Texas; and then spent one year at Harvard University in charge of a land use project.

He was with the bureau of agricultural economics, Washington, D.C. for one year before returning to the University in May, 1939 as extension soil conservationist.

While extension soil conservationist, he also founded the Soil Auger, a widely distributed periodical devoted to soil conservation education and practices. Dr. Beaumont has written numerous bulletins and scientific papers on soils, conservation and crops. He is the author of two books on gardening —covering organic or artificial manures and soils. He has traveled extensively in the U.S. and Europe (including Russia) studying soils.

Born in Waco, Texas, Dr. Beaumont was reared in western Kentucky and early became acquainted with soil erosion at its worst. He was educated at the University of Kentucky and received his Ph.D. in soils from Cornell University in 1918. He spent four years in western Oregon as a teacher of high school and college science and agriculture.

Simplot Signs Contract For Sulfuric Acid

KELLOGG, WASH.—Bunker Hill Co. and J. R. Simplot Co., Pocatello, Idaho, have signed an 11-year contract whereby Simplot will purchase 5,000 tons of sulfuric acid monthly from the mining concern. Bunker Hill in 1954 completed a three-million-dollar sulfuric plant.

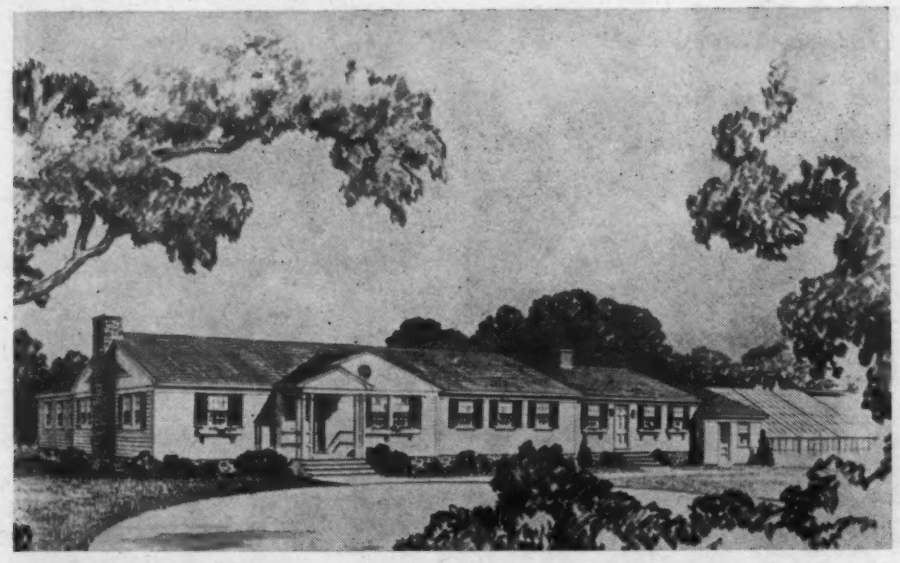
PLANT DISEASE LAB

COLLEGE STATION, TEXAS — After a year of trial operation, the Plant Disease Diagnostic Laboratory here is now operating on a permanent basis. Director G. G. Gibson of the Texas Agricultural Extension Service in announcing the new status for the lab, said it offers a new service to the people of Texas. Dr. Harlan E. Smith, extension plant pathologist, is in charge of the laboratory.

GRANT MADE FOR SOIL STUDIES—A $2,000 grant made possible by International Minerals & Chemical Corp., Chicago, is presented at Oklahoma A&M college, for further studies in needs for phosphate in soils. Marvin Heilman, third from left, Oklahoma A&M graduate student in agronomy, receives the check from Dr. J. C. Engibous, supervisor of biological research for IMC. Looking on are J. L. Mealy, company sales manager of the rock phosphate division, left, and Dr. L. W. Reed, A&M professor of soils, in which field of study Mr. Heilman is working on his M.S. degree. Dr. Reed said that Mr. Heilman will conduct research on the response of low fertility soils in Oklahoma to rock phosphate fertilizer. From studies already conducted by Mr. Heilman, Dr. Reed reported that rock phosphate has a place in Oklahoma soil fertilization programs but more experimentation is needed to gain knowledge that can contribute to efficient use of the fertilizer.

SPENCER AWARDS PRESENTED—Two University of Kansas students, Wayne F. Helgesen (center) and John W. Switzer (right), receive prize-winning checks from C. Y. Thomas, left, vice president of Spencer Chemical Co., Kansas City, at recent ceremonies in the company's offices. The prizes were awarded in connection with the students' participation in advertising campaign projects which were part of their work in journalism and public information at the University. Kansas University's senior class in advertising undertook to prepare a complete campaign including all media for advertising Spencer's ammonium nitrate fertilizer, "Mr. N." The students researched the product, the markets, and suggested various advertising devices which might be employed. Spencer's advertising department and their agency representatives did the judging. The class work was under the direction of Prof. James E. Dykes of the school of journalism. Mr. Helgeson received a $25 first prize and Mr. Switzer received the $15 second prize.

OLIN MATHIESON GRANT—Fundamental research in agriculture will be supported at Kansas State College with a $2,500 grant from the Olin Mathieson Chemical Corp., Little Rock, Ark. Glenn H. Beck, director of the Kansas agricultural experiment station, left, accepts the check from Vernon Jameson, assistant district manager of the plant food division of the corporation. F. W. Smith, second from left, is the K-State staff member who will have charge of the research. R. V. Olson, head of the K-State agronomy department, is at right. This is the seventh consecutive grant the chemical corporation has made to K-State. The money will be used to support tests on fertilizer needs of Kansas crops and relationships between types of fertilizers and their effectiveness. Dr. Smith said it would test the influence the degree of water solubility of phosphorus has on its efficient use by plants.



RESEARCH EXPANSION—Shown above is the architect's drawing of new addition to the Bethany, Conn., agricultural chemical experiment station of Naugatuck Chemical division, United States Rubber Co. The existing structures are the building section and greenhouse at right. Work is underway on the new addition, which will provide for new individual laboratories, conference room and library.

Naugatuck Expanding Research Station and Experimental Farm

BETHANY, CONN.—Naugatuck Chemical Division, United States Rubber Co., is tripling laboratory and office space at its agricultural chemical research station and experimental farm here, it was announced Feb. 13 by Dr. H. D. Tate, manager of agricultural chemical research and development.

Construction is now underway, and the new unit is expected to be completed by spring. The additional floor space will be used for individual laboratories, a large conference room and library. Part of the basement space will be used for a controlled-temperature storage room.

A half-acre artificial lake will also be dug on the nine-acre site, mostly for fire protection. The balance of the acreage is used for an orchard, and experimental plots of row crops.

The Bethany experiment station was opened in 1943. Previously U Rubber Co.'s researchers had fou that some chemicals it had develo for use in rubber manufactur showed promise as agricultural che icals. A research team was organiz and it started work at Bethany a in the laboratory of the chemi division's main plant in nearby N gatuck, Conn. The team was also sisted by scientists from the rub company's general laboratories.

Since 1943 several thousand chemical compounds have been s thesized for screening as possi agricultural chemicals. From t flood of chemicals, in 13 years, come 5 patented agricultural che cals now being used commercial Three more chemicals are now be sold on a trial basis, or being wid tested.

The chemicals developed by Naug tuck Chemical, and now being us commercially, are: Spergon, a fun cide for seed treatment and as foliage application on some r crops; Phygon, a fungicide for se treatment, orchard sprays and so field crops, and also an algicide ponds, irrigation systems and ind trial recirculating water syste Alanap, a selective pre-emerge weedkiller for cucurbits, soybea peanuts, irrigated cotton at lay and several other crops; maleic h drazide, or MH, a growth regula for tobacco sucker control, preve ing sprouting in stored potatoes a onions, controlling grass grow along highways, and eradicati quack grass, and Aramite, a mitici effective against a wide variety mites.

Now being tested, or sold on a tr basis, are a chemical capable of p venting blossom drop on plants su as lima beans and stimulating flow development on such crops as tom toes; a fungicide that shows prom of being effective on a wide numb of crops, and a new pre-emerge weedkiller.

New Consultant Firm Announced in New York

NEW YORK—The formation of new firm of industrial consulta was announced last week by Geo T. Bayley and John B. Calkin. T new organization will be known Calkin & Bayley, Inc., with offi located at 50 East 41st St., N York. It will specialize in marketi and economic research, product a market development, process devel ment and design, business and pl surveys, analysis and testing. Ind tries to be served include, am others, chemical, gas and petrole pulp and paper, packaging, texti plastics and agriculture.

Officers of the corporation John B. Calkin, president; George Bayley, executive vice presid Robert Frank, vice president charge of marketing and econo research; and John L. Parsons, president in charge of pulp and pa

Mr. Calkin received his educa at Haverford College, University Maine, Massachusetts Institute Technology and Cornell Univers He has had experience in resea engineering, sales, production a management.

Mr. Bayley was with the chem advertising department of the J nal of Commerce for the past years. Prior to that he was associa with Stauffer Chemical Corp. in s and market development capaci He studied at New York Univer with graduate work in finance.

Dr. Frank held various techn positions with Fertilizer Sales I London, England; Societe des P ucts Azotes, Paris, France; Ba ische Stickstoffwerke, Berlin, many. For eighteen years he associated with American Cyana Co. and Chemical Construction C and more recently was a pri consultant. He received his docto at Technische Hochschule Berli

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Ove F. Jensen | John Spicer, Jr. | Philip B. Turner

u Pont Names Three echnical Specialists on mmoniating Solutions

WILMINGTON, DEL. — Appointent of three technical specialists in e field who will provide customer rvices for "Uramon" ammonia liqrs, Du Pont's urea-ammoniating lutions, was recently announced by e company's Polychemicals Departent.

Specialists assigned to this work re Ove F. Jensen for the midwestern tates, John Spicer, Jr., for the southastern states, and Dr. Philip B. urner for the northeastern states.

This new field group supplements he technical services available to stomers both at the polychemicals les service laboratory near Wilington, and from the department's chnically trained sales force.

Mr. Jensen, formerly a nitrogen roducts sales representative, will be chnical specialist for the midwestrn states, with headquarters in Maple City, Mich. Mr. Jensen joined u Pont in 1933, as a sales repreentative for the former Ammonia epartment, later incorporated into he Polychemicals Department. He as served in this capacity until his ecent appointment.

A native of Michigan, Mr. Jensen received a degree in agriculture from Michigan State College in 1914. After receiving an M.S. degree in soils from Iowa State College in 1916, he taught chemistry and did soil experimental work. He was later associated with the National Fertilizer Assn.

Mr. Spicer, formerly a nitrogen products sales representative, becomes technical specialist for the southeastern states, with headquarters in Goldsboro, N.C. Mr. Spicer joined Du Pont in 1938, and was a sales representative in the Ammonia and Polychemicals Departments until 1956—with four years leave for military service.

A native North Carolinian, Mr. Spicer majored in chemistry at the University of North Carolina. From 1928 to 1938, he was employed as a sales representative and warehouse operator for several southern companies.

Dr. Turner, who recently joined the staff of the Polychemicals Department after managing a fertilizer plant for the Michigan Farm Bureau, becomes technical specialist for the northeastern states, with headquarters in Wilmington. A native of Maine, Dr. Turner received a bachelor of science degree in 1948 from the University of Maine, and his M.S. degree from the University of Massachusetts in 1950. He received his Ph.D. degree in soil science from Michigan State University in 1955.

alifornia Fertilizer se Tops Million ons for First Time

SACRAMENTO — California farmrs spread more than a million tons chemical fertilizers on their lands 1956, the first time this figure has en exceeded in the history of the tate. The State Bureau of Chemisy, Department of Agriculture, reorts that the 1955 total was 976,000 ns and the 1950 total, 640,050 tons.

The Bureau reports that one of the ost significant agricultural developents in California during 1956 was s conversion from a nitrogen imorting to a major nitrogen manucturing state. During the past two ears huge urea and basic nitrogen anufacturing plants have started peration in the State.

One of the interesting developents noted by bureau personnel was e increasing use of commercal fertlizers in liquid form. For example, qua ammonia accounted for 18% the state's fertilizer sales during 56.

Robert Z. Rollins, chief of the Bueau of Chemistry, reported the use combined fertilizers and pesticides d not caught on in California like has in many other states. "They e most feasible where there are ly a few crops, soil types and major sts," he said. "In California, pracally every farmer has a different rtilizer and pesticide requirement."

arquiss Farm Supply oosts Storage Capacity

CLINTON, ILL. — Marquiss Farm pply here has added storage capay to its liquid plant, and now has rage of 192,000 gallons. Charles E. arquiss is owner and manager of e firm, Thomas Edwards is sales nager and Fred O. Price is office nager.

IMC Sales, Earnings Gain in Second Quarter

CHICAGO — International Minerals & Chemical Corp. Jan. 29 reported net earnings after taxes of $1,208,000, or 48¢ per share on the 2,337,257 common shares outstanding, for the second quarter ended Dec. 31, 1956. This compares with $1,314,000, or 52¢ per share, for the second quarter ended Dec. 31, 1955.

Earnings before taxes in the second quarter of this fiscal year, totaling $1,747,000, were 22% above the $1,436,000 for the corresponding period of 1955.

Louis Ware, IMC president, said that this was the fourth consecutive quarter in which earnings before taxes exceeded those of the comparable period in the previous year. He pointed out that the tax provision last year was less than this year due to the industry-wide strike that occurred in Florida during the first quarter of last fiscal year.

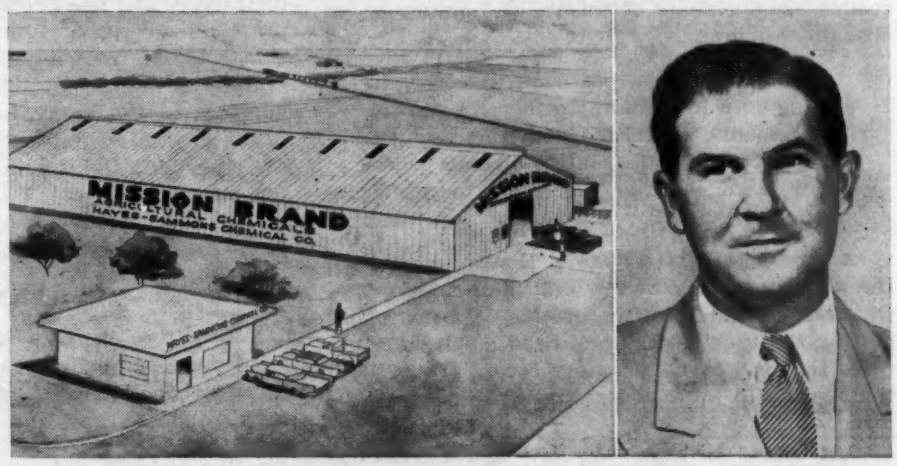
Net sales for the quarter ended Dec. 31, 1956, totaling $23,461,000, were up 8½% over the $21,633,000 for the second quarter of the previous fiscal year.

In the first six months ended Dec. 31, 1956, net earnings after taxes were $1,822,000, or 70¢ per common share, compared with $455,000, or 11¢ per share. Earnings before taxes were $2,603,000, compared with $577,000. Net sales for the first six months of the current fiscal year, totaling $41,937,000 were 11½% ahead of the $37,621,000 of a year ago.

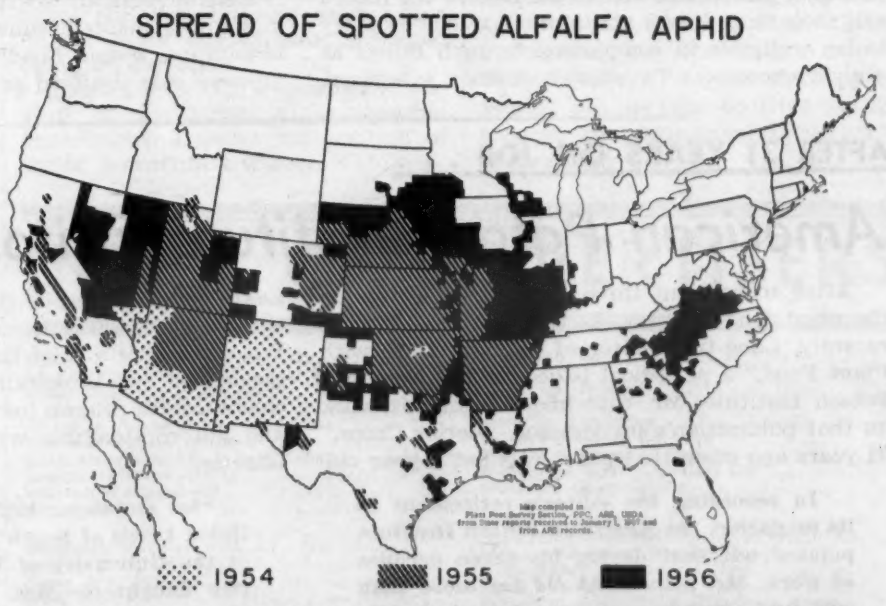
FERTILIZER RECOMMENDATION

CLEMSON, S.C. — Circular 110, Fertilizer Recommendations for Field and Vegetable Crops, South Carolina, is being distributed by the South Carolina Agricultural Experiment Station.

NEW U.S. STEEL PLANT—Gordon Bywater, left, superintendent of the new U.S. Steel plant at Geneva, Utah, shows some of the machinery in the nitric acid plant to a group from U.S. Steel's coal chemicals division. From left to right are Mr. Bywater, Max Henderson, Frank Adams, Charles Bourg, Gene Boyce and Murry McJunkin. See story on page 1.



HAYES-SAMMONS PLANT—This artist's drawing shows the new Hayes-Sammons Chemical Co. plant and sales office located four miles west of Indianola, Miss., on U.S. Highway 82. The formulating plant, comprised of 17,000 square feet of floor space, is due for completion in mid-March. At right is Andy N. White, new general manager of the Delta division plant and sales for Hayes-Sammons. See page 1 for the story.



APHID EXPANDS OPERATIONS—The above map, prepared by the Plant Pest Survey Section, plant pest control, Agricultural Research Service, USDA, points out graphically the much broader distribution gained by the spotted alfalfa aphid in 1956. The black areas above indicate locations where the insect had not been found previously. The dotted areas in Arizona and New Mexico mark the location of original infestation in 1954. The pest made tremendous headway in 1955 by infesting the nation's main agricultural areas, and again in 1956 it strengthened its position by pushing in all directions until no state in southern U.S. is free of the pest. See story on page 1.

Kansas Pesticide Dealer Conference Scheduled

MANHATTAN, KANSAS—The first Kansas Pesticide Dealer and Custom Applicator conference will be at Kansas State College Feb. 26, according to Chris C. Burkhardt of the entomology department, general chairman for the conference. Sessions will be in Williams Auditorium of Umberger Hall.

Sponsoring the conference are the K-State departments of entomology, agronomy, agricultural engineering, botany and plant pathology, the extension service, and the Agricultural Research Service of the U.S. Department of Agriculture.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

Eternal Vigilance, Price Of Pesticide Safety, Too

Safety in the use of pesticides is a subject of considerable importance and is sure to be discussed at the San Francisco meeting of the National Agricultural Chemicals Assn. in a few weeks. With the season of heavy use not far off, it is appropriate for the trade to keep in mind that constant vigilance is the key to safety. Included in this idea, of course, is the matter of reminding users at every opportunity that the written instructions on labels for the handling and application of pesticides, really mean what they say.

It is still true, unfortunately, that many people continue in their belief that pesticides are responsible for all kinds of human ills, and to these folks, any report of injury brought about by insecticides, regardless of the cause, is confirming evidence to support their prejudice. Thus, it is more important than ever to use every means to reduce the incidents of misuse and injury to an absolute minimum.

Not only is the pesticide industry, including both its manufacturing and marketing segments, concerned with this problem, but so are the state control officials whose job it is to see that labels and materials are up to standard.

A recent talk by Clyde A. Bower, director of the division of entomology and plant industry of Oklahoma, pointed up the officials' concern about getting the user to read and heed labels. He indicates that the pesticide safety record is good, but there are still areas where headway needs to be made.

"At times," he says, "We have had a great hue and cry about mass poisoning of the people of this nation by pesticides, but such rumors were usually the result of 'headlinehunters,' and time has proven such charges false. It is true that without our laws this nation could have been in more difficulty with the advent of the new pesticides following World War II, but we believe the record will show that deaths attributable to our industry to be negligible in comparison to such things as aspirin execesses. To offer a further safeguard, Public Law 518 now exists. This law, coupled with the Federal Pesticide Act, makes a team whose record will speak for itself for years to come.

"'Read the Label' has become common language everywhere. Our laws require not only ingredient statements, and directions for use, but adequate precautionary labeling. This is all well and good if we could only get the grower to 'Read the Label.' Countless dollars of the manufacturers' money and time have gone into telling what can't be done with the product as well as telling what it will do, and yet we are prone to complain if we ignore all that is written on the label and get a little sick.

"As a regulatory official, I strive at all times to enforce the law and protect the public, but sometimes I want to throw up my hands in disgust and stop trying to protect that individual who will not take the slightest effort to protect himself as dictated by the most elementary of common sense practices. Maybe at times we overdo the protection angle to the point the buyer assumes he has nothing to do but pay this money for the product, dump it in the spray tank sans directions, aim in the general vicinity of the pest to be controlled and they yell if he gets hurt or fails to control the bug."

Mosquitoes—Agricultural Pest

Mosquitoes, usually not regarded as agricultural pests as such, have been cited as contributing to reductions in farm yields on the basis of tests conducted by the USDA and the Public Health Service.

The survey indicated that mosquitoes reduce farm income in several ways. They annoy farm workers, thus reducing their efficiency; they bother livestock and poultry, and transmit disease including encephalitas (sleeping sickness) to both man and animals.

Control methods are well known, but still the mosquito remains a summer-long annoyance, and in addition, lessens farm efficiency at a time when growers can ill-afford any such thing.

AFTER 31 YEARS ON JOB . . .

American Potash Institute Editor Retires

After more than three decades of service in the plant food industry, R. H. Stinchfield, retired recently. Long-time editor of "Better Crops with Plant Food," a periodical issued by the American Potash Institute, Mr. Stinchfield began his work on that publication's predecessor, "Better Crops," 31 years ago when that paper was but a year old.

In recording the editor's retirement in its magazine, the American Potash Institute pointed out that during his three decades of work, Mr. Stinchfield did far more than edit just another agricultural journal. "He helped develop a brand of scientific journalism in agriculture," the article said.

Continuing in its accolade, the paper said: "When he came to work on 'Better Crops,' the magazine was barely a year old. And the only space for the editor's desk at that time was in a small corner of the potash library. Out of that corner, he started building a journal that has served American agriculture usefully and loyally for over three decades.

"Born on a dairy farm near Waupaca, Wisconsin, R. H. Stinchfield had to drop out of high school briefly at 18 because of polio—but soon returned to go on to the University of Wisconsin, where he interrupted his education, again, to help his mother after his father died.

"Following World War I service at the Great Lakes Navy Center, he returned to graduate from the 4-year agriculture course at the University of Wisconsin. For a brief time, he handled the press services of the Wisconsin College of Agriculture, wrote a farm column for the 'Milwaukee Journal,' and did considerable writing for the 'Breeder's Gazette.'

"In October, 1927, he married Miss Helen Lewis of South Milwaukee. They met at the University of Wisconsin. They have two daughters—Mrs. Nancy T. Mertz of Washington; and Sandra, now a student at Penn Hall.

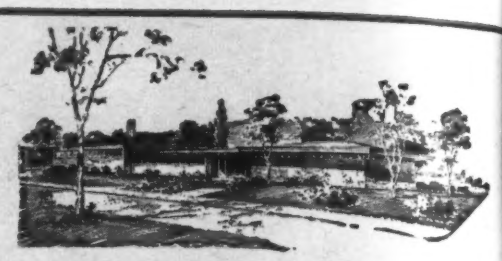
"He is a member of the University Club of Washington, D.C., Alpha Zeta, Sigma Delta Chi, and Alpha Gamma Rho. He has a green thumb in the yard and a keen eye for antiques—which he plans to work fully after a trip South with Mrs. Stinchfield.

"At 5 o'clock on his last day at his desk, he was editing copy for 'Better Crops.' He started as a working editor and he retired as a working editor.

"He worked hard to keep 'Better Crops' honest, accurate, interesting—to fulfill its slogan: 'The Whole Truth—Not Selected Truth.'

"And he succeeded—for 31 years.

"No fuller tribute could be written of editor Ros Stinchfield."



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

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MEETING MEMOS

Feb. 20—Aircraft Sprayers Short Course, St. Paul Campus, University of Minnesota.

Feb. 27-28—Sixth Annual Pesticide Chemicals School, Clemson Agricultural College, Clemson, S.C.

March 5—Nitrogen Day Institute, Turner Hall, Monroe, Wis.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

Feb. 19-20—Alabama Pest Control Conference and First Annual Meeting of the Alabama Association for the Control of Economic Pests, Auburn, Ala., W. G. Eden, Alabama Polytechnic Institute, Auburn, secretary-treasurer.

Feb. 24-26—Texas Agricultural Aviation Conference and Short Course On Pest Control, Texas A&M College, College Station, Texas.

Feb. 26—Kansas Pesticide Dealer and Custom Applicator Conference, Williams Auditorium, Umberger Hall, Kansas State College, Manhattan, Kansas.

March 4-5—Fertilizer Section, Southern Safety Conference, Hotel John Marshall, Richmond, Va. Quentin S. Lee, Cotton Producers' Assn., Atlanta, Ga., general chairman.

March 5-6—Western Cotton Production Conference, Hotel Westward Ho, Phoenix, Ariz.

March 6-8—National Agricultural Chemicals Assn., Spring Meeting, Fairmont Hotel, San Francisco, L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

March 11-12—Southwestern Branch, Entomological Society of America, Annual Meeting, Gunter Hotel, San Antonio, Sherman W. Clark, 811 Rusk Ave., Houston 2, Texas, Secretary-Treasurer.

March 13-15—New Jersey Mosquito Extermination Assn. 44th Annual Meeting, Hotel Haddon Hall, Atlantic City, N.J., Dr. Bailey B. Pepper, Rutgers University, Secretary.

March 14-15—Oregon Feed & Seed Dealers Assn., Annual Meeting, Multnomah Hotel, Portland, Ore.; March 14 Morning Program Set Aside for Fertilizer Topics.

March 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

April 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 14-15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

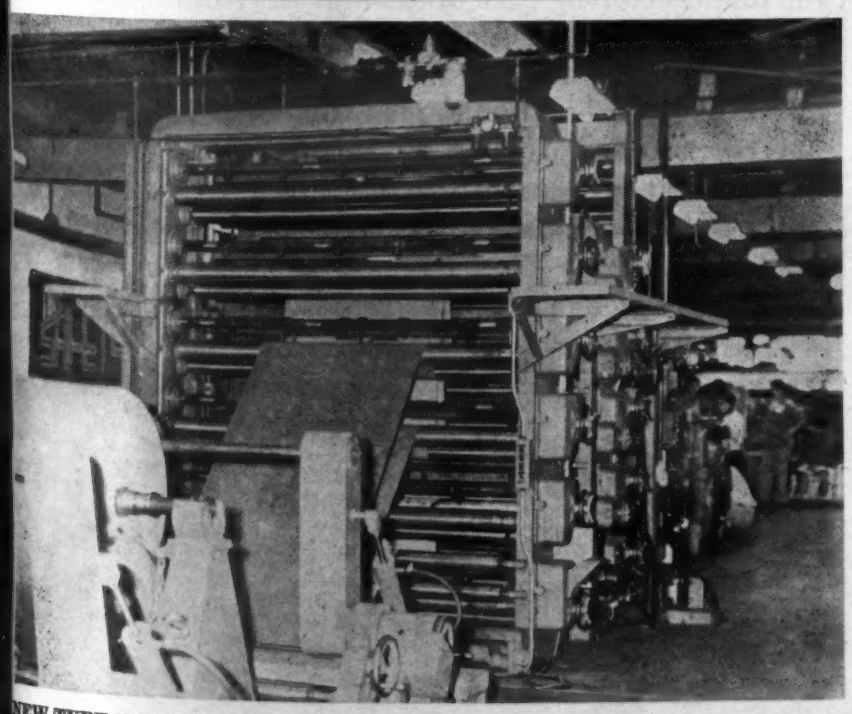
July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvas Hotel, Galveston, Texas.

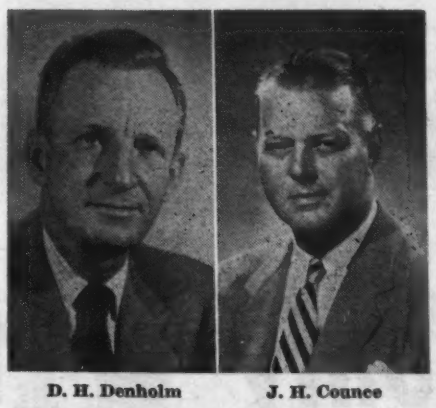
Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.



NEW TYPE BAG PRODUCED HERE—The machinery pictured above is now producing the "Step-Flex," a stepped-end bag, at the Wellsburg, W.Va., plant of Arkell & Smiths. The new type container has a pressure-glued, stepped end at the top and bottom, forming a squared-off type of construction, for facilitating handling, shipping and stacking. The company is expanding, and plans to produce 72 million Step-Flex bags a year, according to Sheldon Y. Carnes, vice president and general sales manager. The new type bag is offered with three or four walls.



D. H. Denholm J. H. Counce

Chase Bag Co. to Expand Southern Sales Management

CHICAGO—The Chase Bag Co. is expanding the managerial staffs of its southern sales region and its New Orleans manufacturing plant. In line with this, J. H. Counce, southern regional sales director and manager of the New Orleans branch, will devote all of his time to directing sales in the southern region. A regional sales headquarters has been opened in downtown New Orleans.

According to R. N. Connors, executive vice president, D. H. Denholm, formerly chief industrial engineer for Chase, has been appointed manager of the New Orleans plant.

Mr. Counce joined Chase Bag at New Orleans in 1940, and has been branch manager since 1947. He was appointed southern regional sales director in 1953, directing sales policy and sales personnel in the south central and southeastern states.

An engineer for Chase since 1946, Mr. Denholm was named head of the firm's industrial engineering department at St. Louis in 1952. He holds a master's degree in engineering and is president of the St. Louis chapter and a national director of membership for the American Institute of Industrial Engineers. Mr. Denholm lectures frequently at Washington University.

Mr. Counce will establish a separate sales headquarters for Chase's southern region at the International Trade Mart in downtown New Orleans. At the same location will be the firm's New Orleans sales office, managed by P. E. Nelson; the export sales division, managed by J. A. Sutherlin, and the southern sales office of the paper bag division, managed by G. N. Burns.

Charles S. Wicks, a member of the staff of the industrial engineering department, assumes the position of senior industrial engineer.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $10 per column inch.

All Want Ads cash with order.

BUSINESS OPPORTUNITIES

FOR SALE—5 ANHYDROUS AMMONIA storage plants and allied equipment. Engineered the best. Expansion possibilities. NH_3 or LPG. Excellent area northern Illinois. Capacity 110,000 gallons. Established profitable operation. For further information phone or write Walter Mengel, 1120 Lake Shore Drive, Chicago 11, Illinois.

HELP WANTED

AGRICULTURAL SALESMEN

Experienced in selling nitrogen products or other fertilizer materials to fertilizer manufacturers required.

Salesmen are expected to become familiar with the technology of ammoniating solution used in mixed fertilizer manufacture. Duties will be to sell the company's nitrogen products to fertilizer manufacturers.

In reply state personal data, education, experience, and salary requirements.

Inquiries held confidential.

Address reply to:

SOHIO CHEMICAL COMPANY
Industrial Relations Division
Box 628, Lima, Ohio

South Carolina Tonnage

CLEMSON, S.C.—Fertilizer distribution in South Carolina during January totaled 39,286 tons, compared with 41,629 tons in January a year ago, the South Carolina Department of Fertilizer Inspection and Analysis has reported. Distribution for the first seven months (July-January) of this fiscal year totaled 162,215 tons, up from 161,675 tons in the corresponding period a year earlier.

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FOR RICHER FIELDS
Croplife
PUBLISHED EVERY MONDAY
A WEEKLY NEWSPAPER FOR THE TWO BILLION DOLLAR AGRICULTURAL CHEMICAL INDUSTRY
AUGUST 23, 1954
Cover Crop Provisions of ACP Outlined
Impact of Farm Law on Industry Hinges on Diverted Acre Policy
Fall Fertilization, Need for Balanced Fertility Stressed at Wisconsin Ammonia Meeting
Minnesota Armyworm Campaign Saves $40 Million
INSECT, PLANT DISEASE NOTES

Serving the Agricultural Chemical Industry . . .

Croplife is the weekly *news*paper for all phases of the industry from the manufacturers of basic chemicals down the production and distribution chain through the retail dealers. Croplife reaches *all* the key men in the industry. These groups are reading Croplife:

- **Fertilizer manufacturers, mixers and suppliers of fertilizer ingredients**
- **Formulators of Pesticides, Herbicides and other Farm Chemicals**
- **Retail Dealers selling fertilizer, farm chemicals and other farm supplies; Custom Sprayers, Pest Control Operators, and Nurserymen**
- **Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants**

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

Croplife's unique distribution plan permits advertising (1) on the national level to the manufacturing core of the industry, and (2) on the regional crop-area basis to the distribution segment of the market. Ask a Croplife representative to elaborate on this in terms of your product!

Your advertisement in Croplife will share the *impact* and *import* of Croplife as it reports weekly to the men who create action in the agricultural chemical field.

Croplife . . . for richer sales fields

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Minneapolis, 2501 Wayzata Boulevard
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